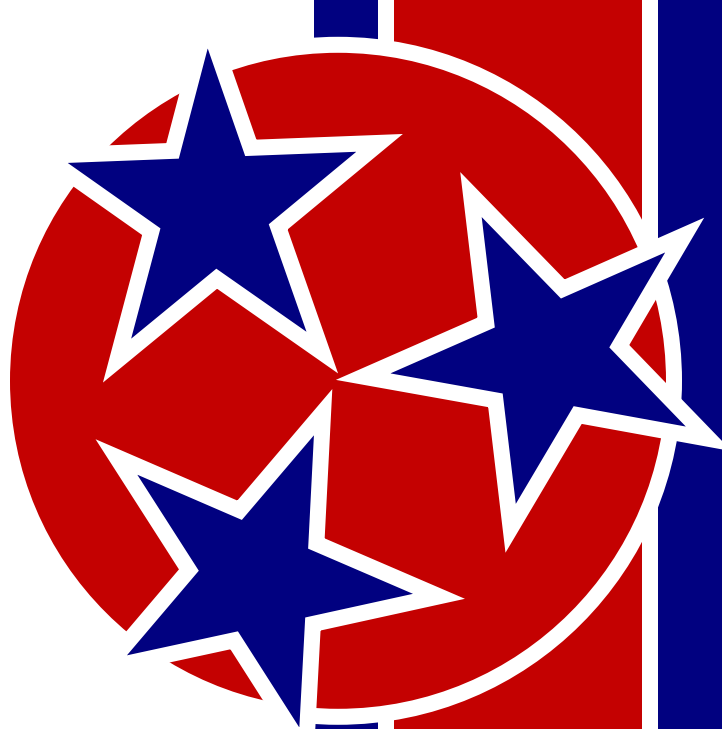


*Current Issues in  
Tennessee  
Higher Education and  
Public Policy*

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## Introduction

Erik C. Ness and Brian E. Noland, *Tennessee Higher Education Commission*

In an effort to apply scholarly research to current policy issues in Tennessee, this volume presents articles from six scholars representing five different Tennessee universities. The topics range from a broad reform paradigm for educational systems to an intent review of e-commerce degree programs. While the issues explored vary considerably, each article offers recommendations and suggests implications relevant to both policymakers and administrators. Indeed, this is the aim of *Current Issues*, to bridge the work of Tennessee researchers and Tennessee higher education leaders.

The articles within this volume are especially relevant given the current fiscal environment in Tennessee marked by stagnant appropriations and increasing tuition and fees. This troubling trend has implications for both single institutions and wider systems that center on the economic principles of efficiency and investment. The studies considering reform models and resource utilization respectively consider efficient means to govern a system and allocate resources. However, the study exploring institutional mission illustrates the challenges to efficiency posed by varied interests and stakeholders. The final two studies in this volume address the theme of investment as they consider the potential for economic development and e-commerce curricula. Aside from their relevance to the economic issues in Tennessee, these articles represent the unique perspectives of local education experts familiar with the intricate context of higher education in the state.

In the first article, James Guthrie considers the effects of two reform paradigms: (1) Consortium for Policy Research in Education (CPRE) Systemic Reform Paradigm; and (2) Consortium on Renewing Education (CORE) Paradigm. The primary differences distilled in this article focus on the centralized versus decentralized structure. *Policy alignment* is the focus of the CPRE paradigm, whereby reform is driven by a common policy crafted for an entire system. The CORE paradigm is essentially a school-based reform strategy that allows individual schools their own *integrative capacity* to deploy resources based on their schools' specific needs. While these paradigms are considered within the K-12 framework, Guthrie's article on policy reform models offers a conceptual lens relevant for the consideration of higher education in Tennessee.

Shifting from the system-wide reform paradigms to institutional mission development, Cunningham and Hood's article explores the competing interests and perspectives within public institutions of higher education. Each group of stakeholders has different views on the roles and perceptions of the university, which leads to conflicting expectations and unaligned priorities. Given this reality, Cunningham and Hood suggest that institutions engage in "participatory processes, constructive conflict management procedures, and a multiple-stakeholder model for development of a mission statement that is inclusive and integrative."

G.L. Donhardt outlines specific steps for resource allocation in the Tennessee higher education system in "Squeezing the Juice: Strategic Resource Utilization in Tennessee Public Higher Education." Rather than lament over the low level of funds allocated, Donhardt argues, Tennessee should allocate resources to meet the needs of the marketplace in four areas: students, finance, planning and budgeting, and assessment. With pointed recommendations, this article presents a plan worthy of policymakers' consideration.

Bridget Jones Cotham Kelley offers further pertinent information for policymakers in her article, "The Role of Community Colleges in Economic Development." By examining the perceptions of economic development practices of community colleges among the presidents of Tennessee community colleges and technology centers and community-level economic development professionals, the author finds major differences in opinions on current emphases, desired emphases, and the role of Tennessee community colleges in economic development. The article offers a dozen conclusions and ten specific recommendations to address these discrepancies and, thus, yield more revenue for community colleges through economic development activities.

The final article presents a means to use technology to improve the curriculum and instruction. Zabihollah Rezaee offers a broad look at the role of electronic commerce (e-commerce) in the business world and university programs in Tennessee, across the United States, and abroad. By providing a detailed view of the landscape of e-commerce education, Rezaee suggests several implications for Tennessee higher education and public policy, assuring policymakers that despite the dot.com decline e-commerce is an essential aspect of any business curriculum.

## **Contracted Solutions to Urban Education Problems**

James W. Guthrie, *Vanderbilt University*

The recent worldwide economic downturn has blunted some of the rationale for American education reform. The American economy now clearly leads the world and the education doomsday message initiated 15 years ago by *A Nation at Risk* appears, at least, to have been premature. However, regardless of the rhetoric about education and our collective economic fat, the American citizenry has maintained its personal interest in school reform, and nowhere is this more accurate than among inhabitants of our big cities. However, city school districts are caught between two contrasting views of what constitutes education reform. One paradigm suggests that higher achievement results from individual schools complying with centrally promulgated regulations. The other strategy places individual schools at the center of reform and argues to construct enabling policies in support of them. This chapter describes those contrasting strategic views of reform and explains their practical consequences.

### **Education Reform May Have Lost Its Conventional *Raison D'etre***

The 1983 *A Nation at Risk* used hyperbole and drumbeat alliteration to drive home the message that low academic achievement was about to economically sink the United States. The education systems of our European and Asian economic competitors were portrayed as dynamic engines fueling a productive labor force to which we were likely to succumb (Johnson, 1982). The high academic standards of these nations were repeatedly portrayed as models for the United States to emulate (Coy, 1986). Only if we achieved similar levels of academic excellence could we as a nation hope to survive. The entire undertaking was remarkably reminiscent of the rhetoric surrounding the 1957 launching of Sputnik. The only difference with *A Nation at Risk* was that the external threat was economic and commercial, not military and technological.

Release of *A Nation at Risk* triggered the formation of hundreds of state- and local-level task forces, blue ribbon panels, and strategic planning groups empowered to design and redesign the American education system. Legislatures could not enact new statutes fast enough. High school graduation standards were intensified; college

admission requirements were elevated. New textbooks were written. Homework assignments were imposed until parents became exhausted. Advanced placement classes were extolled. State testing systems were constructed. School board members, administrators, and teachers were exhorted to work harder and hold higher standards for themselves and their students.

Despite the well-intentioned efforts of states and school districts, matters apparently did not improve. Six years later, President Bush and the nation's governors met in Charlottesville, Virginia, and dedicated the nation to a set of laudable and rigorous national education goals. Even as recently as 1996 and 1999, governors and business officials reconvened at IBM's headquarters in New York and rededicated their commitment to enacting content and performance standards and achieving higher levels of academic excellence.

In some ways, the United States' desperate attempt to reform appeared hopeless. How could an entire nation be elevated educationally in sufficient time to overcome the imminent twin perils of domestic decay and international subjugation? However, by the beginning of the 1990s, a set of counterclaims began to emerge. Authors, analysts, and public school advocates such as Gerald Bracey (1995), the Sandia National Laboratory (Carson, Huelskamp, & Woodall, 1991), David Berliner and Bruce Biddle (1995), and Richard Rothstein (1998) repeatedly reported that despite critics' appraisal of our nation's academic performance, it was no worse than it had ever been.

Others began to look more closely at claims regarding U.S. international academic default. Whereas it was still clear that most of our 12th-grade students could not stand up to international colleagues in science and mathematics, our 4th- and 8th-graders did much better. Moreover, comparisons of international 12th-grade scores with those of several selected states proved that there were components of the American education system that, contrary to widespread perception, could hold their own against overseas competition.

Once learning of America's apparent economic health, European and Asian self-confidence eroded and performance anxiety set in. The economies of our global competitors disintegrated. The Japanese yen sank. European unemployment soared. Russia raced to the edge of economic oblivion. Once touted second-world tigers such as Malaysia, Thailand, and Indonesia, despite having education systems with high

expectations, were on the verge of civic chaos and had to be bailed out economically by the International Monetary Fund. Financial markets shuddered to think what would happen in places with really poor education systems such as Brazil.

As the 20th century has drawn to a close, matters appear to have reversed themselves. Though much beyond our shores appears economically dismal, the U.S. economy, the same economy that only 16 years before was presumed imperiled by a rising tide of educational mediocrity, is about to set a new record for sustained growth. After 4 or 5 years of unemployment rates routinely below 5%, we are redefining theoretical full employment. We have reduced welfare rolls; accepted millions of new immigrant workers into our midst; cut back on federal government employees and armed forces personnel; undergone numerous corporate downsizings; substituted technology for labor in virtually every undertaking; absorbed women, baby boomers, and senior citizens into the workforce; and we are still short of labor. All the while, given this economic growth, inflation has remained at unexpectedly low levels.

### **A Possible New Reform Driver: Individual Economic Interests**

While policy wonks have been gyrating and debating, the American people are steadfastly kept education a priority. Poll after poll reveals that U.S. citizens want a better education system. This has been true throughout the debate about our possible economic inundation by foreign trading powers. This concern for improving education is particularly evident from polling results of citizens regarding big-city schools and from big-city parents. Eighty-six percent of respondents in the most recent Kappan poll (Rose & Gallup, 1998) indicated that improving inner-city schools is very important. Another 10% said it is fairly important to improve inner-city schools. There was no variation in response among the demographic groups polled.

If our collective well-being is not as clearly connected with national education achievement levels as may have been naively argued by authors of *A Nation at Risk*, then why do citizens continue to care individually about education reform? The answer may reside in a far more micro world.

In a 1994 *Atlantic Monthly* article, Peter Drucker argued that the United States is undergoing a social transformation. He contended that the high-wage jobs available throughout most of the 20th century to low-educated workers are evaporating. A high school dropout can no longer expect to find a manufacturing job paying \$50,000

annually, making the link between a higher lifetime income and higher levels of schooling more evident than ever. To drop out of high school now is to place one's self at substantial risk of holding a low-income job (Drucker, 1994).

Also, whatever one can say about U.S. school achievement in general, one cannot say regarding big-city achievement in particular. The academic achievement of urban students is lower than that of surrounding suburban districts and of states in general. Urban children overwhelmingly suffer from poverty. Urban school districts disproportionately serve disabled and limited-English-speaking students. Their teachers tend to be less qualified, their buildings larger and older, their leadership unstable, their management strategies less effective, and their governance mechanisms and political dynamics vulnerable to special interests and those less concerned with academic achievement (see Chubb & Moe, 1990; Consortium on Renewing Education [CORE], 1998).

Thus, citizens and their *elected* officials, particularly state and urban officials, have been seeking solutions to America's achievement challenge. President Clinton has proposed national examinations, national payments for smaller class sizes, tax relief for parents paying their children's college tuition, and federal dollars for school construction. The Republican Party, nationally, has been less focused on a strategy but generally has advocated voucher plans, charter schools, and state and local initiatives.

### **A Battle for the Perceptions of Policymakers and Reformers**

Outside the glare of the media spotlight and electioneering rhetoric, a quieter battle is being waged for the intellectual soul of education reform. This is an academic or conceptual conflict over the paradigm, or fundamental road map, that should undergird education reform efforts. The issue is abstract but the practical consequences are significant.

The description that follows is deliberately overdrawn. The effort here is to crystallize the two sets of strategic ideas in their most oppositional form so that a reader can thereby understand the essence of the difference. In fact, the two paradigms do share several common features, and when the time comes to translate paradigm consequences into policy practice, there are places where the two models

overlap in reality. Still, when distilled, here is the difference.

### A Policy-Centered Paradigm

The principal proponent of this point of view is the Consortium for Policy Research in Education (CPRE), the federally funded think tank centered at the University of Pennsylvania.

The CPRE systemic reform paradigm is displayed in Figure 10.1. Here a reader can see that the principal reform dynamic is *policy alignment*. The assumption is made that if important policy levers, controlled by the state and to a lesser degree by local school districts, can be properly specified and aligned then their combined impact on schools will be positive. Student achievement is held to respond to the various regulations and inducements that will result from such coherence and alignment (Fuhrman, 1994).

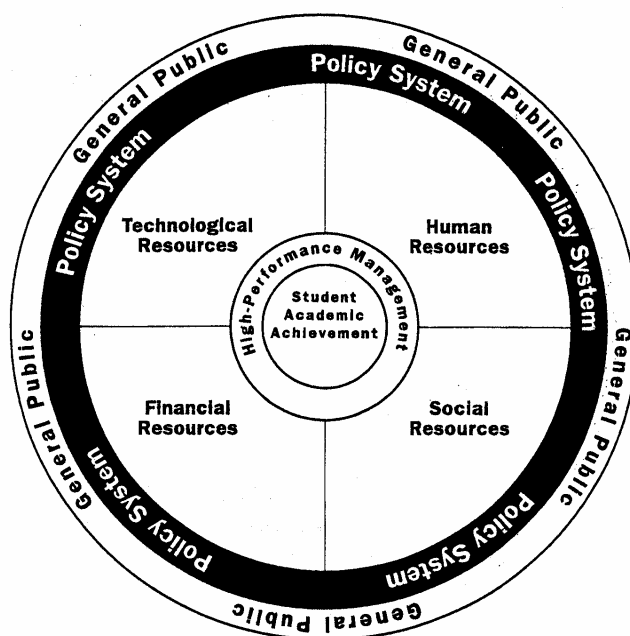


FIG. 10.1. The CPRE Systemic Reform Paradigm

In this depiction of reform, schools are taken to be nodes in an administrative neural network. Schools will certainly be more effective, the paradigm holds, if teachers, students, and parents know what subject-matter content and learning outcomes are expected, if textbooks and computer programs used in classes are aligned with these content standards, if state and local tests examine a student's

grasp of this content, if teachers are trained to instruct in this content, if staff development activities are consistent with these expectations, and so on.

In this depiction of the ideal policy world for education, the individual school is viewed as an operational recipient of these good policies. If the policies are correct and consistent, then this harmonic convergence of preferences should trigger higher student performance. The important policy lever is compliance. If the policies are correct, then there should be little deviation on the part of a school. Schools should not be seen as empowered agents and free to set their own courses of action. To provide schools with such discretion would be to run the risk that they might take actions that would disalign some element of the policy web.

This has proven to be an attractive strategy. State after state has pursued the construction and adoption of content standards. Efforts have been made to promote testing aligned with such standards. Multiple task forces have operated nationally to persuade states to adopt credentialing standards and to get schools of education to undertake teacher training in a manner consistent with these content standards. The Clinton administration proposals regarding national examinations are in large part based on this model of education reform.

It should be mentioned that this strategy of alignment closely matches what is generally taking place overseas in other developed nations with highly centralized education systems.

### **A School-Centered Paradigm**

Figure 10.2 depicts the Consortium on Renewing Education (CORE) paradigm. CORE is a foundation-sponsored association of academic, civic, and business officials interested in education reform.

The CORE paradigm assumes that the school is a unique hybrid organization. Like a corporation, it is composed of fungible resources and specific people with definite skills and knowledge, all tied together by some overall conception of how the people, money, and equipment combine to deliver instruction and help students learn and develop skills, habits, and values. The CORE paradigm views the school as a community in that it requires and develops bonds of trust among the people who work within it, parents, neighbors, and the broader society. The school is productive

because it has the incentive and the capacity to adapt its educational program to changing needs, both those of its students and of the society and economy that students will someday enter (Hill & Guthrie, 1999).

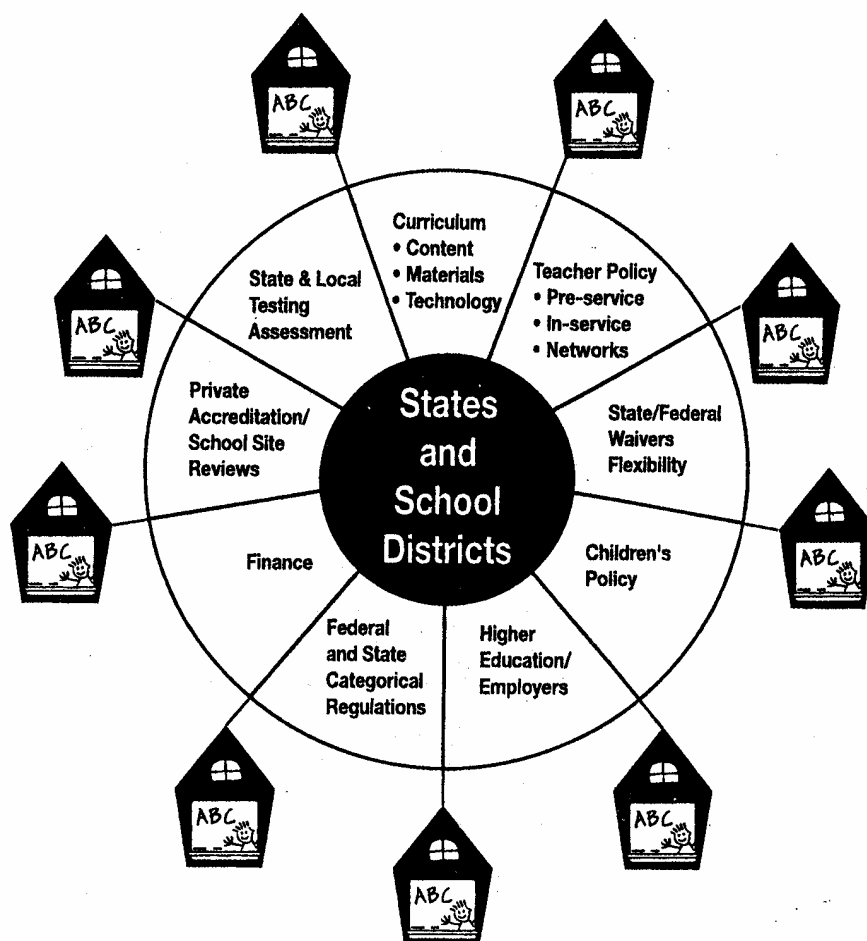


FIG. 10.2. The CORE Paradigm

The CORE paradigm is almost the converse of the systemic reform paradigm. CORE places the individual school at the center of action and then searches for means by which the policy environment can facilitate and reinforce the actions of the school. The CORE assumption is that an effective school possesses a difficult-to-capture but nonetheless real trait labeled *integrative capacity*. Integrative capacity is the characteristic that likely distinguishes effective from ineffective schools.

Integrative capacity is the set of organizing principles that suggests the manner

in which a school should deploy its resources, namely its human, social, political, and financial capital. All schools have some integrative capacity. Even failing or weak schools have capital resources; they just do not consciously or deliberately array them for purposes of attaining high academic achievement. The CORE paradigm suggests that policies, no matter how well intended, can in fact disrupt the performance of a school, even when such policies convey added resources. Federal programs intended to benefit low-income youngsters, until recent Title I alterations, often constricted the heart of a school by insisting that youngsters be pulled out of class-rooms and placed with specialized teachers for part of the instructional time. Such actions interrupt effective schooling and poignantly display the dysfunctional effect of policies that focus on regulation rather than individual student achievement.

### **Paradigms Compared**

The CPRE policy-centered paradigm attempts to take advantage of schools' resource dependency on government. Because schools are agents of states and local districts, they are ill positioned to reject policies issued from such sources. To reject such policies is to risk the continued flow of resources. Regulatory compliance is not only assumed, it is to be desired in the CPRE model. The challenge is to design policies so that they are deserving of being complied with (Hill & Celio, 1998).

The CORE school-centered paradigm takes resource dependency to be the principal weakness in today's large school systems. Here, resource dependency is the evil to be overcome. In the CORE paradigm, it is this very dependency that interferes with and interrupts the efforts of successful schools to design and implement their own management strategy, to effectively construct an integrative capacity that will lead to academic achievement. The CORE paradigm seeks means for attenuating or diluting resource dependency.

Questions raised by the CORE paradigm are significantly different from those derived from the traditional policy research paradigm that starts with policymakers' tools and asks how they can be used to change schools 10 ways desired by public officials (Hill & Marks, 1982; McDonnell & Elmore, 1987). The conventional policy research framework regards the school as a receiver of assets created elsewhere and as an implementer of decisions made by a central school board.

The CORE paradigm does not eliminate the need for research and policy

discussions structured by other paradigms—as long as schools are publicly funded and subject to oversight by public officials, there will be some need for the policy-research paradigm. However, a new framework like the CORE paradigm described previously is required to structure research on how to strengthen schools as active agents and problem solvers, rather than as passive responders to outside forces.

Much current educational policy and research treat the school as a black box: things are done to or for the school, not by it. Assets (staff members, equipment) are added to or subtracted from schools. Constraints in the form of new goals, performance quotas, testing programs, and regulations are imposed on schools by school boards and funding agencies. New curricula and staff training programs are selected for whole districts and then infused into schools. Budget shortfalls are met by mandated districtwide reductions in school staffing or services. Such policies are always intended to make schools better, stronger, or fairer places. But, as decades of research in education and other areas of public service have shown (Berman & McLaughlin, 1979; Bryk, Lee, & Holland, 1993; Darling-Hammond, 1997; Newmann, 1996; Newmann, Rigdon, & King, 1997), productive schools are communities that take their own initiatives and assume responsibility for children's learning; they are not passive material ready to be molded (Table 1).

### **City Schools as a Paradigm Battleground**

Urban schools are the locus of competition between these two strategic paradigms. Rural schools are generally small and the mechanisms by which they are shaped and controlled are frequently tightly linked to local parent preferences and community values. Other than to ensure that they are funded, most states impose few policy imperatives on remote and -sparsely populated schools.

Suburban schools may be parts of larger units. However, by virtue of greater socioeconomic homogeneity, their clients and residents are able to maintain greater control over their schools.

Big cities are different because the constituency for achievement in urban settings has been uniquely diluted. Urban parents want better schools and higher achievement for their children. This is made clear in their responses to opinion polls and the intensity with which poll respondents support alternative schooling arrangements when provided with an opportunity. Since 1994, the Kappan poll (Rose

& Gallup, 1998) has asked respondents if they favored the idea of allowing parents to send children to the public, private, or parochial school of their choice with part or all of the tuition being paid by the government. In 1998, 51% of respondents favored this idea, while 45% opposed it. Public school parents expressed their support of the idea as well, with 56% approving and 40% disapproving. The 1998 results demonstrate a reversal in margins over the 1996 results, when 43% of respondents supported the idea and 54% opposed it. In terms of demographics, the groups most likely to support the idea in 1998 were non-Whites (68%) and 18-to-29- year-olds (63%), while those most likely to oppose the idea were individuals age 50 to 64 (56%) and those living in rural areas (56%).

The results of the 1998 Kappan poll (Rose & Gallup, 1998) also indicate that Americans generally understand the problems of big-city schools and would like to see these problems addressed. From 1989-1993, support for improving inner-city schools rose from 74% to 81%. Two thirds of respondents in the 1998 poll indicated a willingness to pay more taxes to improve inner-city schools. Non-Whites (79%), Democrats (74%), 50-to-64-year-olds (78%), and manual laborers (73%) comprise the groups most willing to pay taxes to improve inner-city schools; furthermore, no identifiable groups indicated an unwillingness to pay taxes to improve inner-city schools.

However, the voices of parents and the public seem to get lost easily in the cacophony of city politics. Historic alterations in city government and demographic dynamics have provided narrow, nonacademic, political interests with a particularly strong purchase on city schools' governance. Nowhere is the pressure for schools to serve multiple purposes more intense. Nowhere is the political agenda forced on schools so complicated, cross-pressured, discordant, or disruptive. Only state leaders with the cooperation of mayors and other city government and education officials can overcome this condition and reestablish and sustain a high-priority demand in public schools for academic achievement.

**Table 1**  
Different Paradigms Identify Different Questions about How to Improve School Performance

	<b>Policy Research Paradigm</b>	<b>CORE Paradigm</b>
School purposes and productivity (integrative capital)	How shall public officials define schools' goals and ensure that every school pursues priorities set by public deliberation?	How can a school adopt and implement a clear theory of teaching and learning that meets the needs of its students? What can impede schoolwide integration? What sources of help are available to help schools choose and implement integrating theories of instruction?
Sources and uses of funds (financial capital)	How shall public officials determine the proper amounts and uses of funds for schools, and ensure that schools use funds as intended?	How can schools stabilize income and manage money and risks? How can they make prudent trade-offs between current services and future performance?
Sources, quality, and effectiveness of teachers (human capital)	How shall public officials determine what skills teachers need, ensure that schools have access to properly prepared teachers, and invest in in-service programs to ensure teacher quality?	How can schools define their staff needs, choose between alternatives of hiring new staff and training existing staff, and find qualified people to hire? How can public officials ensure that schools have a wide range of high-quality choices?
Parental and community support (social capital)	What rules should public officials enact to ensure that school staff take parental and community views and aspirations seriously?	How can a school clarify its promises and demands so that teachers and parents know what to expect? How can school leaders balance personalization and responsiveness to parents with the need to keep promises about academic and behavioral standards? How diverse a set of expectations can a school meet?
School's legitimacy as a public institution (political capital)	What rules must all schools follow if they are to be considered public? How should public officials respond to a school's failure to comply with basic rules?	How can schools build and keep the confidence of public officials and voters, while maintaining the freedom of action necessary for self-improvement?

*Note:* From Hill & Guthrie (1999). Copyright 1999 by Jossey-Bass. Adapted by permission.

## **What Went Wrong in Our Cities?**

One hundred years ago, city schools were among the nation's finest educational institutions. Families moved to cities in order to obtain public schooling for the children. What happened? How did such a reversal come about?

Many hypotheses exist. We do not choose here to dispute any particular explanation. However, a piece of history is important. At the beginning of this century, four important reform movements coincided. Each of these had dramatic, negative, and long lasting effects on cities, and the four conditions were mutually reinforcing.

*Creating Monster Districts.* Near the turn of the last century, with hardly a shred of supportive evidence, a coalition of education, professors, business leaders, and civic officials began a national effort to consolidate small school districts and eliminate small schools. They claimed that small was economically and educationally ineffective. They were remarkably successful in promoting this interest. By 1950, the number of school districts had been reduced dramatically, and the reduction continues to this day. In 1929 there were approximately 127,000 local school districts. Today, there are less than 15,000. While this consolidation took place, enrollments grew dramatically. Whereas in 1950 the modal American school held 300 students, today it enrolls more than 600 students. The consequence of consolidation was a legacy of larger and more impersonal organizations for all of American education. However, this condition was intensified in cities where population growth was greatest.

*Stifling Public Participation.* The outcome of Progressive Era muckraking was an effort to insulate education from partisan politics. Big cities were particular targets. Here reformers eliminated ward-based school boards and centralized governance authority in citywide bodies, often appointed or at least nominated through nonpartisan mechanisms. The long-term effect of depoliticizing urban education has been to pull big-city school systems away from the elected officials who may care most about them, namely, mayors and city council members. Depoliticizing school district governance insulates schools from the concerns of the larger body politic. The result is an ability of specialized interests to dominate city school board politics and impose their narrow agenda over what may well be the preference of the larger population for improved schools and academic achievement.

*Reinforcing Bureaucracy.* Scientific management proponents and efficiency experts of the "cheaper by the dozen" era argued that schools could be managed like

manufacturing plants, a "one best system" of education management. This movement, again intensely directed at big-city schools, reinforced the movement toward centralized bureaucracies.

*Diluting Standards.* Starting at the turn of the 20th century, professional educators began to argue for a more practical curriculum. They downplayed academic rigor in favor of occupational relevance. They claimed that immigrant children and the children of the poor, those beginning to dominate big-city school enrollments, could not cope with the intensity of a classical academic curriculum. An erosion of standards began and we took a step away from the rigorous courses that are an important basis for the complicated mathematics, science, and critical thinking so necessary in the 21st century.

*Subsidizing Suburbia.* The previously mentioned four interlocking debilities were exacerbated by the nation's post-World War II policy of subsidizing suburban growth. Federal funding for freeway systems and federally initiated, low-interest home loans put the American dream of home ownership within the grasp of tens of millions of middle-class Americans. These are the families who traditionally benefited from and supported public schools. When they reacted favorably to the incentives to move to suburbs, they took a valuable resource with them, namely, their political sophistication and access to power. Those who had little economic choice but to remain in cities struggled to fill this power vacuum and to protect their schools from special interests. In most cities, they lost, and school quality plummeted.

Suburbanization had another deleterious consequence for urban schools. The departure of large segments of the middle class deprived remaining students of another force for academic achievement, the human capital of middle-class students from whom economically poor students could learn. Middle-class departure also deprived schools of a large constituency to advocate academic achievement.

### **Paradigmatic Consequences**

Who cares what paradigm prevails? What practical consequence does it make? The differences are not as sharply defined in all instances as the foregoing discussion would imply. In fact, the school-based paradigm does not suggest that schools should be cast adrift from all organizational linkages and rendered completely independent. Even in a system of autonomous schools, there would be a need for a mechanism by

which the polity could influence the curriculum and shape a minimum of what is taught. Social cohesion demands some kind of commonality across schools. Also, a set of completely autonomous schools would float free of standards; it would have no quality indicator mechanisms. Hence, the use of some kind of examination system, even one as loosely structured and voluntary as the current National Assessment of Education Progress, would be necessary.

However, there are other differences that may matter more. Under an extreme view of the policy-centered paradigm, permitting the individual school to select its personnel, principal, and teachers is of no consequence. Presumably, all personnel would have met rigorous state-promulgated licensing standards and thus should be considered as interchangeable cogs in a mechanical production process. Giving budgetary discretion to an individual school can be viewed as superfluous because centrally made resource allocation decisions are sufficient and, under this view of the world, no different than what decision makers at a school would make anyway. In a sense, the policy-centered paradigm is a rational, bureaucratic model that assumes it is possible to know what ought to be done and that regulations can be developed that promote production.

The school-based strategy argues for placing as much decision discretion as reasonable at the site of the individual school. Budgetary discretion, personnel decisions, discipline policies, staff-development activities, instructional material, and textbook decisions can all be made by individual schools. Modern inventory and distribution systems can facilitate the operation of individual sites in ways not possible in another era.

In short, the school-centered paradigm argues for charter schools and contract schools. Here are arrangements by which individual schools can operate in the public context, be relatively free of the resources of a central system, and be held accountable for their student performance results and parent satisfaction levels. Such arrangements also dilute the self-serving influence of school district employees on the political process and restore a greater voice for parents and school clients.

**Which Will Prevail?**

The policy-centered, regulatory approach currently has the upper hand. Its advocates, mostly those who would prefer the status quo to a dramatic alteration in authority relationships, hold the balance of power. The transaction costs that must be borne by those who desire to change the paradigm are substantial and the benefits are unclear. Advocates of change are not as well organized as those who benefit from current arrangements. Conversely, the latter are fully aware of the resource risks to them posed by proposals for change and are, therefore, quite willing to undertake the political and organizational efforts necessary to maintain the status quo.

However, an equilibrium point may be reached if it becomes evident to a sufficiently broad political majority that the regulatory approach is incapable of providing the higher levels of results necessary to ensure individual well-being in a knowledge society. In such a context there may be greater long-run political support for adapting a school-centered paradigm.

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## **Competing Interests in Public Higher Education: Development of a Unified Institutional Mission**

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Public higher education is experiencing many challenges and changes in contemporary society. In efforts to enhance quality and accountability, universities have relied increasingly on applications of business models. Terms such as customer and consumer have become commonplace in higher education, and processes such as Total Quality Management (TQM) have been carried into the academic arena (Williams, 1993). In many ways, the model used to consider public institutions of higher education has changed from that of "the academy" to that of competitors in an educational marketplace.

At the heart of the dilemmas of this modern educational marketplace, there are several related questions: What are colleges and universities selling that is of value? Who is the consumer/customer? Who should be responsible for (or share) the costs of providing the product/service? And perhaps most important of all, what is the mission of the contemporary public institution of higher education?

### **The Role of the University**

There are varying perceptions of the business of the university. Some say it is the production of new knowledge. Others say it is to serve as a participating member of the community in which it is located through provision of knowledge and services (typically in partnership with other community programs). Others say it is training of a new group of workers to go forth to companies that will convert their skills and knowledge into profits for their owners and shareholders. Still others say it is the ability to instill appreciation-the cultivation of taste for the finer things of life. At one time, some postsecondary programs for young women were called "finishing schools," which were designed to add a bit of polish to young ladies, preparing them for a more civilized and mannerly lifestyle. (Some private schools still attract students because the students can bring their horses, board them, and ride them while attending college.) For men, "military schools" provided polish for the traditional male gender role. Some people even see the auxiliary enterprise of watching young men and women compete in intercollegiate athletics as central to public higher education, and

there are fans who see intercollegiate sports as providing greater entertainment than professional sports because the athletes are closer to amateur status. At the heart of each of these stances lie knowledge, techniques, and the development of skills.

Today students are interested especially in how their accumulated knowledge and skills will enable them to get jobs, preferably ones they like and that pay good salaries. More to the point, many students come to the public college or university with the expectation that, if successful, they will achieve a better life than that of their parents. For these students, learning new knowledge and skills is a way up the ladder of social mobility. Achieving economic success is seen as the most important goal and well worth the sacrifice that it takes to purchase instruction-or a degree.

Taxpayers and government officials are interested in determining what the citizens of the state gain by funding education instead of some other area that needs funding. How does allocating money to higher education move the state ahead in attracting new sources of income, in making the state a more attractive place to live, and in dealing with the variety of social and economic problems that confront the modern American state?

Employers are interested in knowing whether or not qualified people are graduating who will go to work for them. They do not always need managers. Sometimes they need skilled workers. Sometimes they need computer specialists. Always they need persons equipped with the knowledge and skills to compete successfully with other firms that are offering comparable goods and services. Some say that they simply need people with good basic skills and knowledge whom they may educate further for the specific tasks their firms need.

A small portion of the persons who enroll in institutions of higher education will decide to remain in that area as a work location. These students are those who form the core of our teachers, scholars, technicians, and others who find a place in the higher education industry. The colleges and universities themselves have a stake in the values taught and preserved with regard to passing on various forms of knowledge, techniques, and skills.

The values of the university as discussed by academics are focused on intellectual property, scholarly integrity, and preservation of a place where knowledge and the perfection of technique and skills are important for themselves rather than what profit they can produce. This position often appears to be in conflict with the

values of the other groups with legitimate interests in the university (Press & Washburn, 2000). Indeed, the place of the university as an ivory tower for slow and thoughtful inquiry about the direction and currents of the larger society sometimes is denigrated by the larger society as useless and wasteful of valuable resources. Furthermore, different groups have different timetables against which they evaluate progress toward goals. For example, politicians know that they must face the public at the next election after their term is complete; managers know they must face the owners or stockholders and report on profitability; and students know that they must have some distinct set of knowledge, skills, and experiences to offer employers.

The image of the university presented to the public by development officers, research center directors, and other administrators often appears to differ from the image described above. Is it reasonable-or ethical-for these groups to be "selling an image" that differs from the ideal or from the reality? Are the official representatives of the university aware of the image that the faculty holds and supports? Do they and should they care? For example, if most individuals in the state think of intercollegiate athletics as their major interest in and a strength of the public university, should this image be discouraged or encouraged by the representatives of the university? And as for students, what image of the institution are they encouraged to have by the faculty and by the administration?

To whom are faculties accountable for the published and hidden curricula of the university? Who is to say whether a course is what it should be? Who should determine how much instructional time is allocated to each student? Should administrators perform this task, or should it be done by peers/colleagues? Should faculty members have primary responsibility for assessing what students learn? What role should the state or perhaps future employers have in determining the course of study? How much power should professional accreditation groups have in determining the curriculum? Do students have the knowledge or perspective to tell professors what should and should not be included in courses?

Should the direction of public higher education be determined in accordance with the familiar saying that the one who "pays the piper calls the tune"? Public education is paid for by tuition, by tax dollars, and by contributions from future employers. Salaries of faculty are paid by tax dollars, tuition, grants, and contracts. Equipment and money for buildings may be donated by industries that stand to

benefit from the research they make possible-or individuals who want public recognition for their contributions and whose families consequently may assume some proprietary interest in the institution's activities. Do students and those who are paying tuition have a right to evaluate the curriculum and its effectiveness? How much claim do they have on the time of a faculty member? Do potential employers who contribute to the school have a right to determine curriculum? Should companies that supply research grants and contracts have a say in determining promotion, salary, and tenure-or research priorities? These are only a few questions raised by the idea that education should be accountable to those who pay for it. In the area of public education, "Are the customers always right?"

The central issue revolves around the question of "What is the vision of different groups about what the mission of the public university should be?" The focus of the present analysis is limited deliberately to the public university for a specific reason: A major portion of a public university's budget is derived from tax dollars. Thus, every taxpayer may ask the public university, "What are you doing (or planning to do) with my money?"

### **Perceptions of the University**

Although there are many groups that could be considered as having interest in defining the mission and operation of the public university, 11 focal groups were selected because of their direct relationship to the university as an enterprise. Most of these groups see themselves as "constituents," or groups to which the university should be accountable: alumni, legislators and other government officials, potential employers, professional disciplines, public service clientele, research sponsors, students, students' families, and taxpayers. Two other groups were included because they have primary responsibility for carrying out the business of the university: faculty, who are the primary work force, and university administrators, who are most frequently at the interface between the university and external groups. Generalizations of the somewhat stereotypic perceptions of these groups reveal some important differences in perspectives.

*Alumni* tend to expect that the programs from which they graduated will be recognized favorably in the field and that the strength and integrity of these programs will be

maintained. They say they expect the university to keep in touch with them-and not just through appeals for their money. They tend to respect tradition, and some of their most vocal expectations seem to be for successful sports teams, perhaps partly because of the media attention attracted by athletic programs.

*Faculty*, because the university tends to be the center of their professional interests-and often their personal interests as well-tend to have a broad and often varied set of views and expectations regarding the university. In general, faculty tend to view the university as a setting for support of activities related to their overall professional goals and their specific disciplinary pursuits, which have been said to claim greater loyalty by faculty than do the institutions with which the faculty are affiliated (Danforth, 1995). They often cite expectations of being part of a collegial community and also having the freedom to "practice their craft" in ways they deem professionally appropriate. They generally expect the university to foster opportunities for creative scholarship and view themselves as the legitimate arbiters of quality in the production, transmission and application of knowledge. Faculty differ in the scope of their views, however, particularly if this group includes individuals in the growing number of part-time and temporary (non-tenure-track) positions. Like the politician whose horizon is the next election, some faculty appear to see the horizon as the tenure decision or the promotion to the next rank to which they aspire. Other faculty who feel secure in their positions may see the horizon as the next research grant or contract or the completion of a book in progress. Still others may see the horizon as the graduation of a particular student being mentored or as the end of the semester and completion of grade reports for that term. There also are some faculty who see the horizon as the successful placement of baccalaureate degree graduates in graduate school programs or in entry-level jobs in their major fields of study. And there always are faculty whose faces light up when students seem to show the love of knowledge and study that brought many individuals into teaching careers in postsecondary education.

*Legislators and other governmental officials* may be characterized by an expectation of cost-efficient operation of the university, with a focus on accountability rather than "featherbedding." They expect relevant information to be provided in response to their

requests, and they sometimes seem to expect that faculty and administrators, because they are employees of the state, always will be available to them.

*Potential employers* generally perceive the university as a source of new information and knowledge, including new techniques, and a point of contact with potential future employees. They expect universities to produce graduates who have basic skills in their field, communication skills, problem-solving skills, and a work ethic (e.g. dependability, acceptance of responsibility). Some of them also seem to view the university as a source of tickets to athletic events.

*Professional disciplines* perceive the university as a source of new knowledge and the socializer of new members of the discipline or profession. It is for them the place where the conceptual/theoretical basis for the discipline is created, critiqued, and revised – and perhaps as the place where the ethical code of the field is discussed and instilled. The university is contrasted with the applied world; that is, it is characterized in terms of the ivory tower image. There appears to be unqualified support for tenure as protection for knowledge/research that represents a departure from existing paradigms.

*Public service clientele* (such as the participants in programs of the various extension services) expect help with existing problems in the form of practical information and referral to other people or institutions who can help solve their problems or answer their questions. They typically expect to get prompt responses to an inquiry or request, some personal attention from the service provider, and services at little or no cost. There also is an increasing expectation on the part of the larger community that the university will be a community partner in a variety of social and economic enterprises.

*Research sponsors* perceive the university as a source of cutting-edge knowledge and a place to field test ideas. They identify the university as a provider of access to resources, libraries, research facilities, computing equipment and services, and consultants in various disciplines-and perhaps as a source of low-cost research (cheap labor). They expect to retain ownership or rights to discoveries, patents, and ideas generated in a project. They also expect a quick turn-around on investments with

projects completed in a timely fashion, with outcomes that are directed toward specifications in the RFP and preferably that have applied value that can be realized easily.

*Students*, perhaps because of the immediacy of their relationship to the university and their developmental level, have a particularly extensive and potentially discrepant set of expectations of the university. Of great importance to most of them is low cost of tuition and other expenses, particularly in comparison to private institutions. They also expect availability of programs in their areas of interest, leading to job training through development of marketable skills and knowledge that they see as useful (for which they see specific application). They expect social and recreational opportunities as well as intellectual challenge and stimulation during their time in residence. They generally want sympathetic faculty members and good grades-to which many appear to feel entitled. In fact, at least some students seem to prefer not to have to work too hard to get an education (e.g., not to have to take the initiative in learning, to have schedules that do not interfere with their work and social activities, and to be "spoon-fed"). They want independence in their style of living, and increasing numbers of students want out-of-the-classroom experience in their fields of interest and to receive credit for these experiences. Many students want opportunities for awards and distinctions and financial aid-and most of all, they want to receive degrees.

*Students' families* typically are in the role of sponsors and advocates for the students. Parents often view the university as a custodial institution that will take care of their sons and daughters as well as giving them marketable skills. They want the best possible education for their children, with programs available in the students' (and perhaps the parents') areas of interest. As student bodies include increasing numbers of older students and married students, spouses often are significant family members who become a part of the university's constituency as well. Like parents, they generally want an affordable education-supplemented by financial aid for the students, and public universities tend to be attractive because of their comparatively low cost. Although family members tend to see public education as secular, they want the students to have an education that is consistent with the family's values. They

tend to want a geographically proximate institution so the family members can stay close to home. And parents often seem to favor institutions of which they are alumni.

*Taxpayers* (the citizenry of the state) vary in how important they see postsecondary education being to the state, but there seems to be agreement that the university should not undermine the values of the supporting culture. The taxpayers generally want the university to contribute to the economic development of the state through technology transfer and production of an educated work force (or at least a cadre of workers with skills). Some also see the university as responsible for producing an educated electorate. Many taxpayers say they want public institutions that have public prominence, which may be determined by the overall reputation of the school; by scholarly achievements (e.g., presence of Nobel laureates); or, for some, by distinction in athletics. However, they often seem to oppose expenditures on higher education that might disrupt or reduce the quality of other public services (e.g., medical care, roads, police protection, prisons).

*University administrators* can be viewed as being of two general types: (a) those who are "career administrators" (a kind of professional or technical support staff in areas such as student services and financial management) and (b) those who have been faculty and have moved into administrative positions. The perceptions of these two groups often differ, but they share a common role of standing at the interface between the university and the public. Many administrators tend to perceive the university primarily as their employer and to want job security in their positions. They tend to perceive the university as a business that has a number of assets, that needs to be accountable, and that can be sold to the public as a place to do good deeds (for which a tax write-off may be earned). Some administrators (i.e., those in some positions) are characterized as having lost their focus on students. Many administrators have a sense of responsibility for the actions of faculty, however, and believe that faculty should do a good job with students. They generally are focused on solving problems through a chain of accountability. Administrators in areas of student services appear to understand the need for the safety and security of students. Administrators also appear to ascribe power to parents and may even place greater value on students' talking to their parents than their talking to faculty. Administrators tend to be the

spokespersons of the institution and to represent the institution to the various constituent groups.

From consideration of these different perspectives, several areas appear to be particularly critical to consider. These include perceptions of the primary mission of the university; the highest good provided; the focus of accountability; the way knowledge is viewed; and the roles of students, faculty, and administrators. Typical perceptions of the various interest groups with respect to these dimensions of how the public university may be seen as functioning are summarized in Table 1.

### **Comparison of Perceptions of Various Interest Groups**

Certainly not everyone would agree with all the descriptors of all the interest group categories-or perhaps of any of the categories. And not every member of every interest group fits all-or perhaps any-of the characterizations given. These characterizations are generalizations and are rather stereotypic. The most important thing about the descriptions is not the specific content of them but that they illustrate a key concept: The University has a number of legitimate interest groups, and the perceptions of these groups about the university are different, often markedly so.

It is evident from looking at the perceptions of the various interest groups of the university that there are many images of the public university. Areas of disagreement seem to occur in every category, and some appear to be inconsistent with each other. These differences in the perceptions of the various interest groups include several themes:

1. To what extent is the education of students the primary mission of the public university?
2. How important is the production of new knowledge and technology as a time-consuming activity of university faculty?
3. How much time should faculty should be expected to devote to service to the general public in addition to the time they spend in the classroom?
4. What priority should be given to the funding of higher education with tax dollars?
5. How effective is the university in producing competent employees?

Differences in perceptions with respect to these questions can provide both ethical and logistical challenges for the university as it relates to the various groups.

It is important to note that there are also areas of agreement across interest groups.

Shared perceptions include several themes:

1. Knowledge has a central role in the mission of the university.
2. The quality of life of a graduate should be enhanced by the university experience.
3. Programs of the university should be perceived as reputable.
4. The percentage of graduates who are able to obtain jobs in their areas of study is important.
5. The graduates should contribute to the community both economically and socially.
6. Programs should make wise use of resources.
7. Postsecondary public education should be available to all qualified citizens.

These areas of agreement can provide the basis for moving toward development of an integrative perspective. Such a perspective can transcend the seemingly inconsistent images of the university that appear to exist among different constituent groups.

## **Recommendations and Conclusions**

The wide range of conflicting expectations for publicly supported higher education presents a problem that should be addressed by educational leaders. Several recommendations can be made with respect to a process for doing this.

First, it is important to recognize that the various groups all have legitimate interests in the public institution of higher education. Rather than viewing these perceptions within a judgmental framework, educational leaders can adopt a more inclusive perspective, thus moving from "either-or" to "both-and" thinking that can lead to development of a framework that is more integrative and effective. A conceptual tool for making this transition is a shift from a model of interest groups, which typically are viewed as competing, to a model of stakeholders, which are more likely to be viewed as essential parties to decisions. As Brugha and Varvasovszky (2000) have noted, "stakeholder analysis can be used to generate knowledge about the relevant actors so as to understand their behavior, intentions, interrelations, agendas,

interests, and the influence or resources they have brought-or could bring-to bear on decision-making processes" (p. 239). In addition, the stakeholder model is one that has inherent implications of ethical considerations as well as logistical ones.

Another key task is the formulation of mission statements. Connell and Galasinski (1998) have pointed out that "educational Mission Statements contribute to the construction of reality by defining it, by 'sorting it out'-all the more so given that they are fashioned to be enduring" (p. 463). A mission statement not only functions to provide direction for an organization, but the process of devising a mission statement can provide a mechanism for identifying and clarifying different perspectives and moving forward to the creation of common values, goals, and perceptions.

An effective formulation of a mission statement, as well as of other fundamental positions of the public institution of higher education, requires the involvement of all legitimate stakeholders. The 11 stakeholder groups selected for analysis here should be viewed as examples rather than a comprehensive or enduring list of relevant groups. Indeed, both the list of stakeholder groups and the characteristics of those groups change over time. One example of such a change is the shift in recent years from full-time to part-time faculty for many instructional responsibilities (KaftUs, 2000); this shift has come as administrators have been able to reduce instructional costs (providing teachers for more students with less money) and redirect faculty attention to research and applications for external funding. Another example of a change in a stakeholder group is with the changing characteristics of college students: In 1995, 44% of all college students were over 25 years old, 54% were working, 56% were female, and 43% were part-time students (Levine & Cureton, 1998).

Furthermore, in 1997, there were reports by student affairs officers of increases in such social and personal problem areas as eating disorders, classroom disruptions, alcohol abuse, drug abuse, gambling, and suicide attempts (Levine & Cureton). These characteristics stand in contrast to the typical college students of even one generation earlier. Construction of programs, policies, and priorities that are effective for contemporary society necessarily reflects changes both in the identity of relevant stakeholders and in the characteristics of previously existing stakeholder groups.

Appropriate models for change are essential. In the quest for improved quality, universities have turned to a variety of business models. In particular, Total Quality Management (TQM) has been implemented in a number of universities, but results

have been minimal or negative in many cases. In their review of major problems with use of TQM in higher education, Koch and Fisher (1998) noted the failure of TQM to consider such fundamental areas as value, direction and resource allocation. They also identified problems with the application of TQM in higher education in areas such as

curriculum, experiential learning, funding, the allocation of faculty time, teaching versus research, faculty status and tenure, student access, distance learning and the use of technology, the pricing of higher education, restraining cost increases, relationships with and intercollegiate athletics. (paragraph 34)

Again, the stakeholder model has been found to be more effective in developing participatory business and government, governance and leadership arrangements, faculty compensation processes that result in effective and sustainable outcomes.

Finally, constructive and realistic perspectives of and response to conflict are essential. Conflicting perceptions typically produce a sense of anxiety, and the prospect of change also is unsettling to most people. However, such conflicts can result in healthy change that moves the participants (individuals and institutions) to higher levels of functioning. A number of processes exist that have yielded effective outcomes in helping groups with fundamentally different views attain understanding of and respect for their contrasting positions; one notable example that has been applied to highly controversial issues as well as different ideas about education is the Common Ground model. Search for Common Ground (2001), which has been described as the world's largest conflict resolution organization, involves a framework of dialogue that includes open, respectful, and productive discussion of the difficult public issues facing American society. The components of this process provide a framework that could be used to bridge the differences among the various stakeholders in public higher education.

The question is not whether conflicts exist in perceptions of public higher education or whether change will occur but how differences will be addressed. Effective resolution is most likely to occur if there is educational leadership that makes use of participatory processes, constructive conflict management procedures, and a multiple-stakeholder model for development of a mission statement that is inclusive and integrative.

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Table 1  
Perceptions of Various Interest Groups of Functioning of Key Aspects of the Public University

Interest group	Primary mission of the University	Highest good provided	Focus of Accountability	How knowledge is viewed	Role of Students	Role of Faculty	Role of administration
Alumni	Repository of knowledge and tradition	Respect as a graduate	Occupational success	The understanding gained from experience	The next generation	Mentors	Institutional representatives; fund raisers
Faculty	Provide a community of scholars	Development and transmission of knowledge	Peer evaluation	An expanding body of theories and empirical	The primary audience	Maintain the scholarly community	Facilitators of academic activities
Legislators and other government	Teaching, research and service	Increased educational and economic level of state	Cost efficiency of student outcomes	Facts, analyses, and experiences	The product of the university	State employees; authoritative source of knowledge	Managers and leaders
Potential employers	Evaluation and provision of credentials for graduates	Provision of well-trained potential employees	Effective job performance of graduates	A necessity to keep competitive	Trainees; potential employees and colleagues	Trainers and evaluators	Quality controllers; liaisons
Professional disciplines	Teaching, research, and service in tradition of discipline	Advancement of knowledge through an intellectual	Contribution of new knowledge	A source of power that is valuable for its own sake	Protégés; future professionals	Generators and guardians of knowledge; socializers	Facilitators
Public service clientele	Service (practical problem solution)	Solution of the problem	Responsiveness to service requests	A resource for solving an immediate problem	Junior counterparts	Information providers	Suppliers of service providers
Research sponsors	Research and development	Profitable discoveries	Quality and timeliness of project deliverables	The property of the sponsor for short term	Cheap labor; potential employees	Generators of new knowledge and technology	Project monitors
Students	Provision of credentials and an enjoyable college experience	Easier and better life	Satisfaction with experience; job placement	A means to a better job and a better life	Consumers	Trainers and entertainers	Supervisors of the faculty
Students' families	Career preparation	Social and economic enhancement of graduates	Successful student performance	A ticket to social and economic mobility	Learners	Teachers; surrogate guardians	Financial monitors; monitors of faculty
Taxpayers	Teaching	Reduction in cost of education to public	Cost	A means to a better economy and a good society	Potential skilled workers	Dedicated teachers	Managers who ensure accountability and efficient use of
University Administrators	Dispensing of knowledge through teaching, research and service	Perception as providing valuable public service	Satisfaction of multiple interest groups	The outcome being provided	The primary clients	Employees responsible for achieving program recognition	Chief executive officers

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*Order of authorship is alphabetical. Contributions by the two authors were equal.*

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## **Squeezing the Juice: Strategic Resource Utilization in Public Higher Education**

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Are we to grieve over our weakened financial condition and the growing competition or respond with creative alternatives? Are we to transform the educational enterprise in our state or tinker our way into the future unprepared for the changing marketplace? Higher education in Tennessee awaits our answer. We cannot talk about developing distinctiveness and achieving national eminence while tolerating mediocrity and slothfulness. Educational leaders in Tennessee must be willing to lead our intuitions in fundamental transformations that bring distinction. While we may not be able to direct the amount of resources available to us, we do have a great deal of control over what we do with what we are given. We have the opportunity to distribute our resources strategically to better meet our goals.

In the April 11, 2001 issue of *The Commercial Appeal*, Tennessee State Senator Jim Kyle, member of the Senate Finance Committee, commented on trimming various aspects of the General Fund. "We've been cutting and cutting," he said. "We've gotten about all the juice from that orange that we can" (Wade, 2001). Less than three months left in the fiscal year and state lawmakers are again grappling with how to deal with projected shortfalls in the current year and how to construct a workable state budget for the next.

We have heard the all-too-familiar mantra before: federal mandates and court orders are directing large chunks of our resources while current revenues are inadequate to fund existing programs. Our state financial woes appear to be with us for a while. But instead of focusing on how much juice we can squeeze out of the orange, we should be looking at better ways of using the juice once it is extracted.

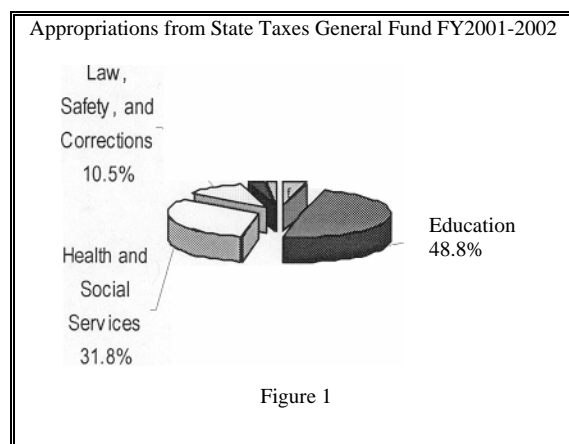
### **Are We to Lament over Too Little Juice or Savor What We Have?**

When I was an undergraduate, everyone knew that if you had a job with IBM or AT&T you had a job for life. As it turned out the addendum should have been added, "As long as you do not plan on living very long." Who would have imagined in the late 1960s that these two giants would lose market position in their industries? Who would believe that Judge Harold Greene would break up Ma Bell? Who would think that Big Blue would ever be displaced as the predominate computer vendor of choice? Our view of history is often myopic. Businesses that were prominent just a few years ago have disappeared from

the scene. "By 1985, thirty years after the Fortune 500 was first defined, 238 of the firms on the initial list had disappeared as independent entities... Between 1985 and 1990, another 143 were gone" (Keen, 1997). Our view of higher education also suffers from the same shortsightedness. We easily lose perspective of our own institutional history and how education in general has changed over a relatively short period of time. We think our colleges and universities have been around forever and will continue to be around forever operating as usual. The fact is most of our institutions have not been in existence for that long. The University of Memphis, for example, got its start as a normal school in 1912, and did not become a four-year institution until 1925 (Sorrels, 1987). Prior to World War II, education was for those who could afford it.

When the GI Bill helped over one million veterans enroll in higher education, we changed our ideas of who should go to college. Sputnik in 1957 gave us a push in the development of math and science education and led to the National Defense Student Loan Program. Enrollment growth resulted (Sykes, 1988). Likewise, Vietnam boosted enrollment and retention rates. Higher education is not immune to changes --good or bad. Not all changes have been

positive. In the past decade, we have seen "state supported" higher education become "state assisted" in many regions. Mounting financial crises along with growing competition and increased customer expectations are affecting higher education in Tennessee. They will likely continue into the future.



### Dwindling Fiscal Resources

In higher education fiscal resources continue to be harder and harder to game with many claimants for state dollars. Quite often education is pitted against corrections and health services when the appropriations pie is cut in Tennessee. Within the General Fund last fiscal year, education received 49.6% of the appropriations from state taxes with health and social services at 31.6% and law, safety, and corrections at 11%. In the current fiscal year education will get a .8% smaller piece of the budget pie than last year. (See figure 2.) While the overall budget shows an increase in dollar amount for education, its portion of the general fund has diminished.

**Figure 2: Appropriations from State Taxes**  
(Bradley, 2001)

<b>General Fund</b>	<b>FY 2000-2001</b>	<b>FY 2001-2002</b>	<b>Difference</b>	<b>FY 2000-2001</b>	<b>FY 2001-2002</b>	<b>Difference</b>
General Government	210,864,625	343,908,200	133,043,575	2.9%	4.4%	1.5%
Education	3,612,462,100	3,853,313,300	240,851,200	49.6%	48.8%	-0.8%
Health and Social Services	2,304,805,300	2,508,501,700	203,696,400	31.6%	31.8%	0.1%
Law, Safety, and Corrections	801,224,800	825,159,400	23,934,600	11.0%	10.5%	-0.5%
Resources and Regulation	242,219,700	242,394,200	174,500	3.3%	3.1%	-0.3%
Business and Economic Development	116,186,100	121,397,500	5,211,400	1.6%	1.5%	-0.1%
	<b>7,287,762,625</b>	<b>7,894,674,300</b>	<b>606,911,675</b>	<b>100.0%</b>	<b>100.0%</b>	

What does this mean for a typical campus like The University of Memphis? A comparison of recent state funding among several peer institutions shows the impact. Of the institutions reporting, only the University of Mississippi had a lower total state contribution.

When state appropriations were compared to number of students served, The University of Memphis finished dead last (See figure 3).

Albeit a very rough measure, state Appropriations per head count gives an indication of how far an institution can fall behind its peers in state support.

Obviously, institutions have different mixes of graduates and undergraduates

as well as part-time and full-time students, but the difference in magnitude of appropriations is disconcerting.

**Figure 3: Fall 1999 Enrollments and FY 1999-2000 Appropriations**

	<b>Total Enrollment</b>	<b>State Appropriation</b>	<b>State Appropriation /Headcount</b>
Univ. Arkansas	15,167	140,953,902	9,293
Georgia State	23,420	152,580,763	6,515
Univ. South Florida	34,839	267,495,432	7,678
Univ. Alabama	18,744	112,498,071	6,002
Univ. Louisville	19,892	161,048,000	8,096
<b>Univ. Memphis</b>	<b>20,301</b>	<b>96,223,231</b>	<b>4,740</b>
Univ. Mississippi	11,648	68,813,351	5,908
Univ. S. Carolina	23,430	160,240,671	6,839
Virginia Commonwealth	23,481	146,885,601	6,256

Lower funding for institutions of higher education in Tennessee means fewer resources for instruction and lower salaries for faculty and staff. The temptation is to succumb to the knee-jerk reaction of implementing across-the-board cuts and to adopt the all-too-simple response that we have to do more with less. The hope is that resources will be restored and life will get back to normal. In reality, life never seems to get back to normal --whatever "normal" means. Across-the-board cuts only diminish good programs and services while introducing mediocrity. The timeworn slogan "Do more with less" implies that our budgets were fat in the first place, or that somehow we can wring more

productivity out of people and programs. In many cases all of the juice has been squeezed out of that orange as well.

Thus far, Tennessee has been spared the severe appropriations problems I witnessed in another state a few years ago. When the financial crunch hit, our administration reacted with larger classes, cutbacks on library purchases, delays in upgrading equipment, salary freezes, and even furloughs until our vocabulary filled with words like retrenchment, right-sizing, and fiscal exigency.

The current funding formula in the State of Tennessee encourages institutions to chase after bodies --more bodies mean more money. When the readily available market potential shrivels, admissions standards tend to erode with the matriculation of students who are not likely to succeed. They come in one door and out the other. Retention measures suffer, the overhead to deal with these students increases, and most importantly these students experience a failing experience, run up loans, and quite often are never able to salvage their educational careers. Putting unqualified students in courses is an opiate. The more you get, the more you need to maintain the funding level.

### Growing Competitiveness

A few years ago colleges and universities that drew students from their region had relatively little competition. Today, the contest is keen. The rivalry for potential students continues to escalate among institutions within Tennessee, our better-funded peers from neighboring states, and the for-profit educational institutions. Combating the growing competitive nature of student recruitment is a major concern requiring the strategic use of resources and astute marketing.

Competitors are quick to emulate programs that are enjoying success elsewhere. Those salient offerings that attracted national attention last year have been adopted by competitors this year, and soon what was prominent becomes what is necessary to sustain market position. When I was an undergraduate back in the late 1960s, institutions with computer labs were the hot tickets. Academic computing facilities generated value and a competitive advantage for their institutions --so much so for me that transferred to an institution that had a computer facility. Now that computers are ubiquitous, they are required to preserve value. Today, it is hard to imagine an institution of higher education without computer labs trying to attract students.

The educational market has become more and more competitive not only among traditional institutions of higher education but with emerging private, for-profit entities as

well. It is the for-profit offerings like the University of Phoenix that may eventually pose the greatest threat. This private enterprise, now in 15 states, Puerto Rico, and Canada grew 22% in degree-seeking students in 1999 and another 22% in 2000 giving them 75,057 degree-seeking students. Their on-line, distance-education enrollment grew 60% in fiscal 1999 and 44% in fiscal 2000. Kaplan, Inc., already with an on-line law school, has announced plans to buy Quest which owns 30 commercial colleges in 11 states, ten institutions of which hold regional accreditation and online programs approved to offer financial aid to students (Carlson, 1999 and Blumenstyk, 2000). The business world has discovered our potential and has set out to exploit it.

### Increasing Customer Expectations

In general, institutions of higher education are not known for their outstanding customer service. In fact, some are not known for even acknowledging that they have customers. The concept sounds too businesslike, and to maintain a sense of academic decorum, one must not do anything that smacks of the corporate world. But the reality of the situation is that higher education does have customers, and we work in a modern environment where "colleges and universities have been forced to become far more corporate-like in the way they operate" (Keller, 2001).

In the 1960s and '70s when traditional-aged students could be herded hither and yon, there was no compelling concern for customer service. On registration day, for example, one would stand in line for the courses desired, and a clerk would pull a punched card out of a stack. That card was the ticket of admission into the class. A few more hoops to jump -run across campus for a signature from the dean and to the bursar's office to pay fees and registration was completed. In those days, few people really viewed students as clientele. Students were thought of as *tabla rosa*, hungry for brilliant lectures and grateful for whatever they were given.

Today, students are less willing to tolerate the run-around treatment. Furthermore, their mothers and fathers (remember them --they were the students who were herded around a few years ago) are more sophisticated now. The issue for these parents is more than just getting one's money's worth. Their children's futures are in the balance and they want their sons and daughters to get the best education possible. Students and parents alike are demanding quality and customer service. When we fail to meet their expectations, their displeasure is not voiced in loud cries of protest, but in muted dissatisfaction. If they do not like what they see during the admission process, they quietly

move on. If they do not like the service they are getting after matriculation, they silently transfer to another institution or drop out completely. The quietude can be deafening for those who have ears to hear. But, too many of us exude a groupthink that says, "Everything is okay. This is the way things have always been done in higher education." We believe our situation is unique, different from every other aspect of the marketplace. To repeat, "We think our colleges and universities have been around forever and will continue to be around forever operating as usual."

Apologists cite numerous factors that contribute to lower graduation rates: under-prepared students entering higher education, the economy enticing students away from education, the lack of student motivation, and skyrocketing costs. Few blame lack of quality or poor customer service, and why should they? Thirty years ago when good customer service was a universal rarity in higher education, graduation rates were higher. So what is the answer? The answer is the market has changed. When all institutions of higher education offered the same long lines and run-around, students tended to shrug off systemic problems as part of the passage to get the degree. Such hassles were just the hoops through which one had to jump. Today, most of our clients are more urbane. They have experienced quality treatment elsewhere in the marketplace, and everything is now judged by a higher standard, including their expectations of post-secondary education. They know what quality is, and they are unwilling to tolerate anything less.

While some institutions of higher education are aggressively marketing their services to potential students, quality customer service is not endemic. Many faculty and administrators remain unconcerned and uninvolved. "Quality is meeting or exceeding customer needs," Daniel Seymour admonished. "If you don't satisfy the customer, someone else will" (Seymour, 1993). To ignore the customer's perception of quality is to make a grievous mistake (Seymour, 1993). Customers may not know exactly what they need in an education but they know quality when they see it and when they do not. When they do not see quality, they move on elsewhere. Most disgruntled customers and potential customers just walk away taking their tuition dollars elsewhere.

### Higher Education's Response

One can count on the fact that the traditional higher education response will be to study the situation and react slowly if at all. Committees will be formed and position papers written. But little innovation comes of it because deep down we really think that our institutions are fail proof and life will continue as is --or "at least until I can retire.

After all, higher education has been remarkably resilient and robust. From our myopic view, higher education has been around forever.

The truth is, we are an industry in danger. Most of our institutions do not have great name recognition or customer loyalty. Few have an overwhelming positive image. We are known more for our athletic programs or lack of athletic programs than we are for our academic achievements. Most of our students are only interested in obtaining a degree. Some do not care from where and may not even care in what field. Our faculty and staff are highly mobile --probably more mobile than in any other employment field. In most cases they can move to another institution and not even lose retirement benefits. Of significance is the University of Tennessee Health Science Center in Memphis that lost 65 faculty in the last academic year. That is more than 10% of the faculty (Powers,2000).

### **Are We to Tinker or Transform?**

Industry leaders like Harvard, Stanford, and Yale can afford the luxury of incremental change, but if one's institution is not at the top of its peer group then radical transformation is needed to put it there. If radical transformation sounds drastic, it is. Higher education in Tennessee cannot tinker its way into the future ill-prepared to meet the changing demands of the marketplace (Keen, 1997). The challenge before educational leaders is to aggressively respond to an environment of limited financial resources, stiff competition, and growing customer expectations. Just working harder is not the answer -- working smarter is. While we may not be able to control our portion of state appropriations, we do have a great deal of control over how we use what we are given. Tennessee's educational leadership needs to strategically dispense available resources to meet the needs of the marketplace. There are a number of opportunities before us that must not be squandered.

### Students

An institution of higher education is a place where students can participate in an educational experience that will not only prepare them for making a living but will help them achieve a better life. Students are both customers and members of academe. They are customers in the sense that they have educational needs which are met by the institution. As consumers they pay and the institution supplies. They are to be treated with the respect and care which any successful merchant would afford his or her most

valued clientele. The entire instructional delivery system must be approachable and reasonable; and education should be made as personal as possible without *in loco parentis*. Positive student-faculty relationships should be promoted, and student involvement in campus life encouraged.

On the other hand, students hold membership in academe. To be admitted to an institution of higher education implies membership in the academic community with a role in the governance of the institution. Students are also affiliated in the sense that they are stakeholders in the educational enterprise. They own their educational development, and are responsible for the realization of their own educational goals. Regardless of the guidance, direction, or enticement provided by the faculty and the supportive intervention granted by the administration to help them achieve their educational goals, students are responsible for their education. Nothing is learned through osmosis but only when the student is willing to expend an effort to succeed. Higher education is a privilege available to those who demonstrate they are capable and have the desire to learn. It is a franchise that must be earned and maintained through academic achievement.

While higher education has many customers and constituencies, the student remains our primary customer. Research interests, foundations and contracts, alumni, and supporters of athletic teams all vie for our attention. Likewise, boards, commissions, faculty, administrators, and staff all contend for consideration, but the student is the principal reason we open our doors. We must focus on caring for this customer above all and strategically dispense resources in efforts that enhance the learning environment. To keep with the metaphor, "We must pour the juice into the right cup.

1) *Be proactive in fostering quality customer service.*

Quality customer service for our students must be pervasive among all those who work in higher education. It is good business and good academics as well. It is how we attract and retain students, and help them achieve the best education possible.

To foster quality customer service, we must think beyond our traditional roles and the artificial bounds we place upon our various programs. We must always ask what can be done to better serve our clientele. Our customers do not care about boundaries. They do not care about governance problems or our financial woes. They care about ease in registration, availability of courses, convenient access to the campus, a curriculum that makes sense, safety, and service. When they have a problem they want it solved in a just and fair manner, and they want to be treated courteously. If we are to be successful, we must keep our customers' best interest in the forefront. That means offering classes at

convenient times for the students, not for our convenience; and developing course requirements that will engage students in learning, not to generate credit-hour production to prop up a failing discipline. Developing quality customer service is not cheap and not always easy, but failing to pursue such excellence is devastating.

2) *Create value for our customers.*

We must focus on programs and processes that create value. Efforts that help support the retention of capable students, endeavors that sustain learning, improvements in services to our students, and innovations that help student recruitment and enrollment management all generate value. Increasing value for our students helps build assets for the institution and the State of Tennessee. Efforts that do not increase value are a waste of resources at best.

3) *Automate processes used by our customers.*

Any procedure that can be accomplished satisfactorily by a customer using computer technology will eventually be automated and will no longer need a human face or interface (Keen, 1997). The need for someone to run those processes will go the way of the paddle-wheel riverboat and the mom-and-pop corner grocery store. ATMs are replacing teller services and on-line trading is supplanting stockbrokers. As telephone direct dialing replaced operator-assisted calls years ago, many systems in higher education must be replaced. There is no job security in continuing with manual processes that can be automated. Ask a paddle-wheel riverboat pilot if you can find one. There are not many left.

Great care must be exercised in procuring innovation. Although technology provides new tools that can help us support the educational enterprise, technology is not a panacea. Because technology is expensive and often has a short shelf life, one must make sure it achieves the desired functionality for the dollars expended.

### Finance

Because we work in an environment where most of the juice has been squeezed out of current state appropriations, we must seek new funding sources to augment our existing fiscal resources. We should also consider changes to the present state funding formula that will promote institutional health. Furthermore, we should consider expanding funding policies that will open our state borders. Such strategies might improve revenue streams and build assets for Tennessee.

1) *Seek external funding.*

The aggressive pursuit of external funding combined with creative ways of sharing overhead revenues can encourage grantsmanship. When I was the Associate Vice President for Academic Affairs at Frostburg State University in the University of Maryland System we saw tremendous growth in our Office of Contracts and Grants function. We attributed this expansion to the implementation of an overhead-sharing plan whereby 30% of the administrative overhead received from a grant was funneled back to the department that initiated it and 30% to the grants office for further development. The assertiveness and creativity proved to be key to our grantsmanship efforts.

2) *Consider funding formulae that promote quality.*

We need to consider better ways to dispense the juice by creating funding formulae that encourage quality in our institutions. The current formula is largely credit hour driven, forcing institutions to seek more and more bodies to generate greater credit-hour production. The unintended consequence is the temptation to lower admissions standards to reach larger pools of potential students. Flat funding, on the other hand, would allow educational leaders to establish appropriate enrollment targets relative to potential market pools and not force admissions offices to chase after bodies. Virginia Polytechnic Institute and State University has such a funding appropriation.

3) *Consider expanding the borders.*

For those institutions landlocked by the bounds of the state, consideration should be given to offering instate tuition to residents of contiguous out-of-state counties. Enormous enrollment potential lies just across the Tennessee line. The economic impact of opening our borders needs to be examined. The University of Tennessee Chattanooga, East Tennessee State University, and The University of Memphis are three institutions that likely could benefit by opening the borders. The University of Tennessee at Martin is already doing this for residents of three counties in Kentucky (UT Martin, 2001).

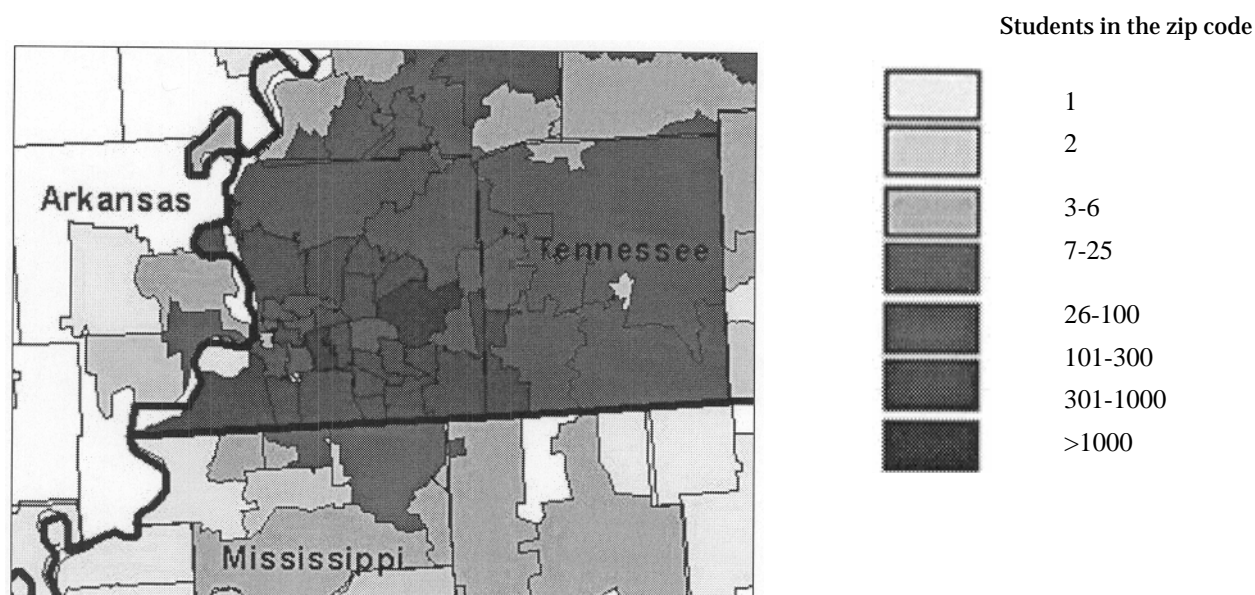
**Figure 4: Fall 2000 Enrollments at The University of Memphis by Zip code**

Figure 4 is a map of Shelby County, Tennessee showing The University of Memphis student residences by zip code. The darker the area the more concentrated the enrollment. The state's borders confine the obvious intensity and limit the institution's potential as a regional institution.

### Planning and Budgeting

When Alice was wandering through Wonderland, she inquired directions of the Cheshire Cat.

"Would you tell me, please, which way I ought to go from here?" "That depends a good deal on where you want to get to," said the Cat. "I do not much care where --" said Alice. "Then it doesn't matter which way you go," said the Cat (Carroll, 1960).

If one does not know where one is going then any direction will suffice. Without well-defined goals, planning is nothing more than shooting from the hip and later drawing a bull's-eye around what was hit (Quick and Buck, 1983). Many organizational goals are purposefully left vague to give their originators greater flexibility in hitting the mark. This type of target practice is all too common, and leads to waste and inefficiency. For institutions that continually suffer through one crisis after another, it appears that planning is given very little thought. They seem to habitually run in reaction mode. Planning linked to budgeting will help administrators become proactive in directing their

institutions. Institutions employing the appropriate technology and statistical analyses will promote the best decision-making.

1) *Link budgeting with planning.*

Task-oriented planning that follows a logical structure of defining goals, obstacles to those goals, and solutions to those obstacles will help the institution fulfill its mission if linked to budgeting which furnishes the resources to implement the strategy. If a workable plan and budget are not linked, the budget becomes the plan.

2) *Use technology and statistical analysis in support of decision-making.*

The American humorist Artemus Ward (1834-67) observed that, "It ain't so much the things we don't know that get us in trouble. It's the things we know that ain't so." When we base decision-making on anecdotal data alone, we risk acting upon spurious assumptions rather than fact. Quite frequently in budgeting, for example, it is one's ability to tell a good story that often determines whether or not resources will be made available. One well-told anecdotal tale can carry more influence than mounds of good research data. Individuals, steeped in the techniques of Wildavsky, know how to play the budget game. Their budget strategies are a common means of achieving the resources necessary for success (Wildavsky, 1964).

The way to reduce the effect of such practices is to demand factual data and statistical analysis in support of decision-making. Decision-making in higher education is touched by the need for quick interpretation and appropriate analyses. Institutional data help our colleges and universities remain salubrious and compete more effectively. Technology and statistical analyses can be employed to help transform data into information so that decisions can be based upon fact rather than supposition.

### Assessment

Educational leaders in Tennessee have the formidable task of assessing the complexities and varied choices facing higher education in the state. Where assessment leads to improved programs and processes, the educational enterprise benefits. Are we asking the right questions? Are we willing to act upon what we learn?

1) *Assess programs / processes and act upon what is learned.*

Assessment is the act of appraisal and evaluation. It is a part of our daily routine. We assess other drivers in traffic, the quality of our meal at a restaurant, and the achievement of our students. Assessment of programs and procedures is just another

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such valuation expected of public higher education. Assessment is an ongoing examination of academic offerings, financial controls, and student services that provides feedback to decision-makers on the quality of the total educational experience. Ideally, the analysis leads to improvements in curriculum and instruction, and enhancements in our supportive procedures. It gives us an opportunity to see what kind of job we are doing with our students. It also allows us to demonstrate the worth of the educational programs for which we are responsible. The citizens of Tennessee seek evidence that higher education makes a difference in the lives of students. They want assurance that programs are having a positive impact. To bring meaning to assessment, institutions of higher education must develop evaluations of their programs and processes that will lead to substantive improvements.

In higher education, we are big on assessing and slow on acting upon what we learn from the assessment. Quite often we know what needs to be done, yet the situation never gets rectified. We must reward those who are producing value, and fund programs that are outstanding. When it is clear that a program is not working, we need to fix it or get rid of it. If a center is not performing as expected, we need to resolve the problems or close it down. That is the accountability the citizens of Tennessee expect.

We must abandon processes that do not justify the costs; stop doing those minor jobs that are not worth doing. Public higher education is full of them. The tracking of long-distance telephone charges is a case in point. Often times we spend more money monitoring processes than we would lose if someone were dishonest. Some state employees have spent a great deal of time tracking a minute long-distance phone call charge that had failed to be logged and ended up dialing the number again to find out who they had initially called. We spend more money on paper clips and no one tracks that. Likely, many of the procedures were instituted because someone, somewhere, cheated. The procedures are in place to make sure that fraudulence will never take place again. Even though the cheater was caught, we are saddled with an onerous audit system designed to stop future abuse.

## *2) Measure what should be valued.*

We are called upon to demonstrate that we are making a positive impact on our students' educational experience and society as a whole. How we fulfill that requirement is of concern. The fear is that we often measure the wrong things. We have a propensity to measure "how many" when we should be measuring what we are doing. It is easier to count the number of students enrolled than it is to demonstrate what we are doing with

those students. The danger is we end up valuing what we measure and lose touch with our mission.

A number of pertinent measures should be considered. The Peat Marwick financial ratios run the gamut from indicating the level of dependence on tuition to the overall financial health of the institution. These metrics can tell if educational and general revenues are covering expenditures, and if auxiliary services are paying for themselves (Peat, Marwick, Mitchell, 1982). Cost accounting procedures such as the Balanced Scorecard help promote accountability by giving administrators better ideas of what the true cost of various operations are at any point in time (Kaplan, 1994).

Productivity measures such as dollars per instructional full-time equivalent student by discipline and instructional measures for each faculty member showing the Tennessee Higher Education Commission full-time equivalent faculty generated help cite areas of concern. Finally, pre-test/post-test measures can demonstrate student development attributable to instruction. Such measures can provide feedback on the progress of meeting goals. The feedback needs to be in real time, not just once a year when it is too late to correct a bad situation.

Are we to grieve over our diminished financial state and the growing competition or respond with creative alternatives? Are we to transform the educational enterprise in our state or fiddle our way into the future unprepared for the changing marketplace? Higher education in Tennessee awaits our answer. We must be ready to lead our educational intuitions in radical transformation to make this all happen. Crying over spilt juice will not make our institutions more competitive. Longing for those halcyon days when we had plenty of juice is not productive. While we may not be able to direct the amount of resources being squeezed out of the orange in our behalf, we do have a great deal of control over what we do with what we are given. We have the opportunity to distribute our resources strategically to better meet our goals.

We cannot talk about developing distinctiveness and achieving national eminence while tolerating mediocrity and slothfulness. If we are to achieve eminence for our state intuitions we must engage in fundamental transformation. Exactly what form that transformation will take depends upon our leaders. But, failure to make radical renovations is *de facto* a choice not to compete. We must do several things. (1) We must generate customer satisfaction among our students. We must build value and promote quality in their behalf by meeting or exceed their expectations. We must keep their welfare

foremost in all of our decisions. (2) We must aggressively seek external sources of funds while considering modifications to the existing state appropriations formula. (3) We must develop sound, task-oriented plans and strategically use resources in sustaining those plans. Budgeting must support planning, not drive it. Nebulous plans that cannot stand the scrutiny of accountability must be declared anathema. (4) We must focus on those issues that are paramount to our mission. By stretching to be all things to all people, we jeopardize healthy programs that should be strengthened and preclude adequate consideration of newer ones. (5) We must use our resources wisely and make people and institutions accountable for what they do or do not do. We must share ownership of the educational enterprise, and continually look for better ways of doing things. In essence, we must work smarter to dispense the juice once it is extracted.

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## **The Role of Tennessee Community Colleges in Economic Development**

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Economic development is discussed as a concept and characterized in terms of overall prosperity of the community and its people. Economic development in education can be defined as a planned process to accomplish simultaneously two major service objectives: (a) making business profitable and productive while (b) creating job opportunities and training qualified workers to fill them. Economic development in general was defined in 1984 by Kingry as a set of planned interventions within the normal economic process designed to improve the duration and stability of individual employment, to increase their [collective] income, and to maintain citizen satisfaction with the quality of life, while avoiding detrimental impacts on the environment. Both definitions reference the process of preparing individuals for full participation in the workforce.

Much debate regarding the connection between economic development and education has been documented during this century. This debate captures the facets of the mutually interdependent relationship between economic development and education and its impact upon the development and support of our country's economic system. Economists have developed the concept of "human capital" into a formal theory, which describes the role of individuals and the development of their potential in support of economic development (Bartik, 1991; Juster, 1975; Becker 1964). Within this theoretical framework, the relationship between economics and education converge.

The concept of economic development is also interconnected between the fields of economics and education. Bartik and other economic development professionals define economic development in terms of job creation and policies that support business development. Bartik's conceptual frame is one of traditional economic development professionals. Later definitions of economic development broaden the concept to include not only job creation efforts, but also the addition of other services that improve the quality of life for all citizens (Baker-Smith, 1995).

In regard to the component of education, the term "work force development" is currently becoming manifest in both economic development and education circles.

Awareness that both economic and community development cannot be achieved without development of human capital is creating a new emphasis in more closely coordinating the efforts of education and economic development communities.

## **Background**

Community colleges are unique American institutions designed to expand access to post-secondary education and training to a larger percentage of individuals previously served by traditional four-year colleges and universities (Parnell, 1982). Four major areas of work were predominant in community colleges during their inception: vocational education, transfer liberal arts, continuing education and community service (Blanding, personal communication, 1999). These areas still comprise the main elements of activities of American community colleges, although individual state systems and institutions have embraced and implemented different combinations. The work of community colleges in support of economic development fits into each of these areas, although clear delineation sometimes is not possible.

Tennessee community colleges were begun in the early 1960s in an effort to expand access to students from the rural areas of Tennessee (Nicks, 1978). Three different types of community colleges were established in this state depending upon the characteristics of the areas served and the proximity of four-year colleges and universities. These were general transfer institutions, technical colleges granting predominately technical related degrees, and combinations of the two. The community colleges established in the rural areas were of the former type, while institutions located in urban areas were of the latter type.

The predominant mission of the rural community colleges was to provide access to general transfer degrees of a liberal arts or professional nature. These schools also added career education programs in the early stages of their growth. The addition of business/industry services and economic development activities came later through continuing education and community service areas. The urban technical community colleges were established later to provide graduates with technical competencies to support the more technologically advanced employers located in urban labor markets. Formal offerings of economic development services began through these institutions. The rural community colleges followed in formal economic and community development endeavors much later.

These different community college institution types have evolved with differing missions, visions, goals and strategies during the last 40-year period. These differences now affect community colleges' intentions and abilities in responding to the economic development publics now requesting services in response to labor market needs (Edwards, personal communication, 1999). This organizational evolution is important to consider as we explore the role of our community colleges in economic development today.

While Tennessee community college organizations have expanded efforts in economic development, other organizations have taken note of the great need to develop human capital in support of continued economic development efforts and economic growth in Tennessee. The Tennessee Growth Policies Board, formed in 1997 by Governor Don Sundquist, identified the "Need to Develop a Skilled and Adaptable Workforce" as the first of six strategic economic development goals contained in Opportunity 21-An Economic Vision for Growth and Prosperity in the 21<sup>st</sup> Century. This Action Program stated that "a new kind of competition has emerged in our economy—the competition for educated and skilled workers. For our businesses to be competitive, Tennessee must take the steps necessary to ensure that they have access to a skilled and adaptable work force." The Board also stated "we must organize our educational system for efficient service delivery and ensure that our approach to education and training provides ways for Tennesseans to upgrade employment skills throughout their lifetimes."

The Tennessee Industrial Development Corporation (TIDC), the states leading technical assistance agency for economic development professionals, also identified preparation of the state's work force as one of the top economic and community development challenges. A commonly held assertion of the leadership of both groups is that without the availability of a trained or trainable work force, the state's economic growth cannot continue.

A consistent theme running through discussions regarding this strategy is the need for closer cooperation among higher educational systems, community colleges, Tennessee technology centers, and economic development entities. The level of shared understanding and collaboration among these groups in Tennessee requires further examination.

**Methods**

Mailed questionnaires and semi-structured interviews were utilized. Data were collected from 14 community college presidents, 26 technology center directors and 61 economic development professionals. Acceptable response rates were obtained from each role group. Spearman's Rho, ANOVA, and Cronbach Alpha statistical tests were used to analyze quantitative data, while grounded theory methods were used to analyze qualitative data. While an applied research design was implemented, many policy findings and recommendations resulted.

**Significance of the Study**

This study examined areas of consensus and differences of perceptions among presidents of Tennessee community colleges, directors of Tennessee technology centers and economic development professionals in regard to economic development practices of Tennessee community colleges. Each of these groups must work together effectively if the intent of the Economic Policies Board's recommendation regarding preparation of the state's work force is to be accomplished. However, the need to prepare a flexible, globally competitive work force in this state has never been greater.

There is a need for close coordination between community college educators and economic development professionals if comprehensive economic development efforts are to be successful. One of the first steps toward close coordination is awareness of both groups of the resources and abilities of the other. This first step in communication will lead to subsequent steps in collaboration (Kingry, 1984). Community college decision-makers need to understand the economic development community's perceptions of the role the institution is performing and should perform in economic development. This awareness will bring about an informed, rational process for defining institutional goals and establishing service priorities. Collaborative attitudes will become apparent and activities will result as community colleges refocus their emphasis to meet the needs of the economic development professional community they serve.

Results of this study provided benchmark data of current perceptions of community college practices in economic development and identified specific areas where practices of community colleges could be improved in response to the need. No

information was found during research activities that a similar study had ever been conducted in Tennessee or that economic developers had ever been involved in similar research.

## **Results**

This study was conducted for the purpose of examining perceptions among presidents of Tennessee community colleges, directors of Tennessee technology centers and economic development professionals from Tennessee communities regarding the role of Tennessee community colleges in economic development.

Results of this study provided a definitive point of reference regarding current and desired levels of community college activities supporting economic development. The 42 activity statements included on the study questionnaire, along with 15 new activities identified during interviews, provided an up-to-date listing of specific community college activities that supported economic development programs in communities. The introduction of three descriptive clusters...Leadership, Educational and Technical Assistance... provided a logical way to categorize and explain community college activities to economic development professionals and other related groups. Meaningful ways to describe community college economic development efforts were developed through use of the clusters to help increase understanding between these groups. The following descriptions of community college economic development activities developed from the work of Kingry (1984), Currin and Sullins (1988), and Selman and Wilmoth, (1995) can be used to improve understanding and collaborative planning for economic development activities among community colleges, technology centers and economic development professionals:

### Leadership Activities

- Maintain a plan for economic development within the college.
- Provide staff development and in-service programs to educate faculty members, staff personnel, and administrators in the basic principles of economic development.
- Designate a person within your college that is primarily responsible for economic development.

- Designate a top administrator to belong to area/local economic development organizations in local communities (e.g., Committee of 100, Chamber of Commerce).
- Encourage advisory committee members (institutional and instructional program) to join local economic development organizations.
- Work with local Private Industry Councils in job-generating activities.
- Establish relationships with state economic development organizations (e.g., State Department of Commerce).
- Serve on local industry recruitment teams (i.e., administrators, counselors, or faculty).
- Designate community college staff to participate on local community development councils.

#### Education Activities

- Work with existing businesses and industrial firms to conduct programs that update teacher competencies.
- Align the curriculum with immediate and future needs of employers.
- Work with local employers to provide cooperative education and /or internship opportunities for students.
- Conduct educational and cultural activities of interest to new and existing business and industrial firms.
- Provide Train the Trainer work shops, course planning, and curriculum development assistance for local business and industrial firms.
- Conduct customized training to meet the specific needs of local business and industrial firms through written agreements.
- Provide resources (facilities, staff, funds, equipment, etc.) to be used to establish a demonstration center for technology training.
- Conduct basic skills training programs for business and industrial firms.
- Provide entrepreneurship training programs.
- Conduct licensure and certification training for local employees.
- Conduct customized short courses and seminars for local employers at college locations.

- Conduct start-up training for new business and industrial firms.
- Conduct training programs for high-risk, targeted populations (e.g. displaced workers, inmates, welfare, rehabilitation clients).
- Support apprenticeship linkage training programs.
- Provide training for local chapters of professional organizations.
- Provide job placement services for students enrolled in the community college.
- Conduct classroom apprenticeship training in cooperation with Labor and Business.
- Contract with industries to provide certain technical training programs not routinely available at the college that address both student demand and community need.
- Provide basic skills (math, reading, and communication) training.
- Provide skill upgrade training for employed persons wanting to keep pace with changing technology or desiring job advancement.
- Provide training in entry and middle management skills.
- Provide training in import/export management.
- Provide courses in business financial planning.
- Provide career and vocational counseling for students.
- Provide pre-screening and skill assessment of potential employees for business.

#### Technical Assistance Activities

- Provide, through formal partnerships, training facilities for use by local employers.
- Collect and disseminate socio-economic data about the community on a regular basis.
- Share information about technological trends with local economic development organizations and local companies.
- Seek local, state, and federal grants to conduct customized training for individual business and industrial firms.
- Establish a business development and /or business and industry contract training center.

- Co-sponsor conferences and meetings with local economic development organizations.
- Operate a business resource center to serve regional businesses.
- Conduct community training needs assessments.

New economic development tasks performed by Tennessee community colleges were identified during interviews of community college presidents, technology center directors and economic developers. These are offered to the literature as updated information to previous studies:

#### Leadership Activities

- Inform economic development and business/industry communities of community college services.
- Identify internal advocates who understand and advocate benefits of partnering with the economic development community.
- Coordinate or host community leadership programs.
- Lead regional consortium efforts in support of rural economic development.
- Establish coordinated efforts between institutions to provide training services.
- Create access to community college services in rural areas.

#### Education Activities

- Educate elected officials on economic development.
- Offer comprehensive learning services at rural community college locations.
- Create seamless learning pathways for students.
- Establish articulated school and work-based programs with high schools and employers.
- Participate in curricula upgrade by gathering information on employer requirements and aligning academic and continuing education curricula.
- Offer programs that allow students to complete GED and prepare for college entry.
- Support faculty internships.

### Technical Assistance

- Participate in community led education/business/community partnerships.
- Support Workforce Investment Act, Empowerment Zone and other federally funded work force development programs.

Data gathered from questionnaire responses were used to answer research questions contained in the quantitative portion of the dissertation. Results follow:

Research question one called for the testing of the similarity of ratings of current emphasis and importance of 42 economic development practices among Tennessee community college presidents. The community college presidents reported a *significant correlation* between “presently occurring” and “should be” occurring items within activity statements contained on the study questionnaire. Thus, from the President’s perspective, high similarity existed between the current emphasis on 42 economic development practices and the importance of those activities.

Research question two called for the testing of the similarity of ratings of current emphasis and importance of 42 economic development practices among Tennessee technology center directors. The Technology center directors reported a *significant correlation* between “presently occurring” and “should be” occurring items with a score slightly higher than the presidents. Thus, from the Directors’ perspective, high similarity also existed between the ratings of current emphasis on 42 economic development practices and the ratings of the importance of those activities.

Research question three called for the testing of the similarity of ratings of current emphasis and importance of 42 economic development practices among Tennessee economic development professionals. The economic developers reported a correlation between “presently occurring” and “should be” occurring items, however their score was a great deal lower than both educator groups. From the Economic Developers’ perspective, moderate similarity existed between the ratings.

This moderate correlation is quite different than the perspectives of both educator groups, as they reported high correlation coefficients between presently and should be occurring activity statements. This difference illustrates the disparity between the ratings and ultimately the perceptions of these groups in relation to the emphasis of economic development activities of Tennessee community colleges.

When asked: What are the areas of consensus and differences among the community college presidents, technology center directors and economic development

professionals' perceptions of the *current* emphasis being placed on selected economic development practices in Tennessee community colleges?

Statistical differences were found among the three groups' perceptions of the current emphasis being placed on selected economic development practices contained in the Educational, Leadership, and Technical clusters. Statistically significant differences between the educators and economic developers were found for each cluster.

When asked: What are the areas of consensus and differences among community college presidents, technology center directors and economic development professionals' perceptions of the *desired* emphasis being placed on selected economic development practices in Tennessee community colleges?

Perceptual differences occurred among the three groups for the Educational cluster. A statistically significant difference was found between the presidents and both groups, the technology center directors and economic developers for this cluster. No perceptual differences occurred among the three groups for the Leadership and Technical Assistance clusters.

Interviews of five community college presidents, technology center directors and economic development professional were completed for the qualitative portion of the dissertation. New community college economic development activities, current issues, and thoughts and perspectives as to the role of Tennessee community colleges in economic development were gathered during the interviews. Results follow:

When asked: What issues need to be considered in regard to this topic, specific *leadership* issues identified by college presidents included:

- Need for systematic funding for economic development programming
- Need for institutional mission and performance changes along with college commitment to an improved workforce
- Development of an economy that supports individual and community well-being.

Specific *leadership* issues identified by technology center directors included:

- Need for mission clarification

- Recognition of the symbiotic relationship between the college and economic development
- Honoring different expectations from many groups
- Recognition that rural community needs for services differ and fall outside the academic realm
- Need for improved college programs to industry needs
- Need for more marketing to and awareness of services by businesses

Specific *leadership* issues identified by economic developers included:

- Workforce development program consolidation, including co-location of One-Stop Career Centers within college sites
- Community college and technology center combination
- Elimination of college boundaries and allowance for colleges to provide services as needed geographically
- Focus of state economic efforts in support of college programs

*Educational* issues identified by economic developers included:

- Great need for economic development staff training
- Specific industry training development
- Flexible programming to industry and technology needs
- Educational pathway creation
- Development of programs for high-risk populations.
- Involvement in Workforce Investment Act implementation
- Development of programs to targeted industry clusters
- Long-term follow-up with companies
- Assistance with labor shortages through employee recruitment
- Development of partnerships with private industries

When asked: Do you have other thoughts or perspectives as to the role of Tennessee community colleges in economic development that should be included in the research, specific thoughts and perspectives identified by community college presidents included:

- The need to define and improve college identities as a major resource in workforce and community development
- Recognition that community colleges serve many publics
- Elimination of duplication of effort
- Collaborative use of resources toward workforce development
- Addition of economic development to state funding and reward systems for community colleges.

Specific thoughts and perspectives identified by technology center directors included:

- The need to recognize that all education leads to economic development
- Recognition that community colleges have a key role in preparing the future workforce
- The need for creation of a broad based, responsive system that addressed community needs regardless of missions or self interests
- The need to create articulated pathways for seamless student movement
- Acting in a referral role to other training providers
- Recognition that presidential leadership is key to economic development support
- The need to establish state level leadership in role identification and mission clarification in economic development

Specific thoughts and perspectives provided by economic developers included:

- The need to clarify territorial issues and recognize labor market areas in relation to service area boundaries
- Leadership in efforts to create educational pipelines including school-to-career and Career Center services,
- Addressing technology infrastructure challenges
- Provision of more information on community colleges and system outputs
- Proactive development of relationships with economic developers to assist in recognizing workforce changes and forecasting long-term needs.

Based upon the review of literature, data analysis, and findings cited, the following conclusions were proposed as having significant implications to the role of Tennessee community colleges in economic development:

1. Community college presidents and technology center directors reported views that reflected significant correlation and high similarity, respectively, between economic development activity statements currently emphasized and those perceived as most important. Economic developers reported moderate levels of correlation and similarity between ratings of current emphasis and importance. Comments made during interviews with economic developers also confirmed the lack of understanding of community college activities related to economic development, as comments restated many items contained in the study questionnaire. This dichotomy of results indicates the need for improved understanding between these groups as to the types and priority of economic development efforts.
2. Comments made during interviews with economic developers also confirmed lack of understanding of community college activities related to economic development, as comments restated many items contained in the study questionnaire. This dichotomy of results indicated the need for improved communication between these groups as to the types and priority of economic development efforts.
3. Findings of this study clearly indicated that communication was lacking between community college leaders and economic development professionals. A greater emphasis on communication between the college and the economic development community must occur if Tennessee community colleges develop more highly effective economic development programs. Technology centers should also be included in this dialogue as they also fulfill an important role in providing work force development services in support of economic development.
4. The literature was very clear that close cooperation among community colleges, technical institutes and economic developers is necessary for successful economic development. The study revealed statistical differences in the three group's perceptions of community college

activities in the educational, leadership, and technical assistance cluster categories for current and desired efforts. These findings illustrate that purposeful dialogue between the groups is needed to insure successful collaboration and closer coordination of effort.

5. Examination of the mission of Tennessee community colleges as to the inclusion of economic development and legitimization of supporting programs was needed. The majority of Tennessee community colleges were founded primarily for the purpose of providing access to academic transfer and career degree programs. The need, however, to become more involved in economic activities has occurred at most Tennessee community colleges during the last decade.
6. Lack of awareness of many college personnel, combined with scarce resources for economic development programming, is still an issue and tends to exacerbate slow acceptance of and support for this new area.
7. Systemic evaluation of community college policy, procedures, resource allocation methods and accountability and performance measures was needed to determine ways to facilitate community college efforts in the economic development area.
8. Relationships with other training providers, specifically Tennessee technology centers, in provision of economic development services required examination, as issues of territoriality and duplication continued to arise. This issue needs immediate attention as economic development systems users will continue to request more and more services from each institutional type and continued confusion will likely result.
9. State level expectations regarding the role of Tennessee community colleges in economic development as stated and reinforced in state-level mission, goals and strategies, policies and procedures, accountability measures and funding mechanisms required review and clarification. The lack of these important systemic elements has contributed to the lack of continuity of effort among community colleges.

10. The importance of community college presidential leadership and support of economic development efforts was critical if institutions are to be successful in establishing a leadership role in economic development in the state of Tennessee. Without clear state level policies and procedures, alignment of local missions and programs, identification of additional funding necessary to fulfill economic development roles and expedient response to community and constituent group demands for increased services must be directed locally to fulfill economic development roles and requirements. Without state level direction, only community college presidents can effect these actions within community college organizations. Kingry (1984) stated that “consequently, a community college president’s perceptions of the institutional role in economic development is important for economic development activities to materialize into practices, and this close coordination is to become a reality.” This perspective was confirmed through interview comments from members of each role group throughout the study.
11. From the economic development community standpoint, the need for community college support and efforts to provide educational programming, to serve in leadership roles and provide technical assistance in support of economic development has never been greater.
12. The level of awareness and understanding of rural and urban economic developers to the need for community college services in support of economic development was apparent in the large amount of input provided in the qualitative portions of this study. Not only was understanding of policy and funding issues demonstrated, but significant recommendations were given regarding community college practices and opportunities to expand these in response to community, employer and economic development system needs.

Requests and demands from economic development groups will continue to increase as community colleges are perceived as critical providers of economic and workforce development services. Awareness that both economic and community

development cannot be achieved without development of human capital is creating a new emphasis in more closely coordinating the efforts of the educational and economic development communities in Tennessee.

Based on research results and previously presented conclusions, recommendations for further study include:

1. A study of the changing mission of Tennessee community colleges, or the emphasis on change in different roles, may be in order. This study focused on the economic development role and the different activities that contributed to that role. It did not attempt to prioritize those activities with other mission roles of community colleges. Decision makers not only need to know which activities are perceived as needing more emphasis, but they also need to understand the relationship of those activities to the total mission.
2. There may be other groups that decision-makers may wish to sample regarding perceptions of the community college role in economic development. State level economic development professionals within the Tennessee Department of Economic and Community Development and technical assistance organizations, Tennessee Board of Regents, Tennessee Higher Education Commission staff and Labor and Workforce Development staff could certainly add perspective to the topic.
3. Members of other stakeholder groups may also lend state level support for change of current state and local policies, procedures, and funding mechanisms in support of community college involvement in economic development. Support for a community college is not limited to its constituents, as politically active organizations often take a major role in shaping the college's mission emphasis. Such groups as local chambers of commerce, unions or the state legislature may exhibit strong influences on community colleges. The community college may wish to assess which groups seem to be major influencers on its services or policies that affect delivery of these and to survey the perceptions of these members (Kingry, 1984).

4. A method of describing community college activities by Educational, Leadership, and Technical Assistance cluster categories was developed in conjunction with subject matter experts during the study. These categories may be used to better organize and explain economic development activities to the economic development community along with other external stakeholders.
5. Activities utilized in the study questionnaire were selected from the literature that defined the role of community colleges in economic development. Face validation of the instrument was accomplished, which included all 42 activity statements initially included on the survey instrument. Fifteen new community college practices identified through this study have not been empirically tested, but are recommended for inclusion in the literature as they reflect current perspectives and specific activities that are needed from community colleges in support of the current economic development environment. These activities should continue to be tested and new activities identified as they develop.
6. Duplication of this study for a community college seeking to be more responsive to the economic development needs of their communities would give first-hand knowledge that need not be generalized across states or larger geographic areas. Community colleges or other higher educational institutions may want to adopt the methodology used in this study for use in local areas.
7. A rank order analysis of responses from Tennessee community college presidents, technology center directors and community level economic developers which compares priority rankings of activity statements may be in order to further identify specific activities perceived to be most important from each groups' perspective. This information may offer a finite basis for discussion and development of strategies that can lead to more focused and collaborative efforts. Understanding and strengthened relationships between each group should also result which will only improve joint economic development efforts.
8. A review of successful practices of community colleges in assisting rural economic development efforts is needed to identify successful models that

can be replicated. This coincides with Currin and Sullins' (1988) conclusion that small rural community colleges can play a significant role in the economic development of their respective communities and ultimately improve the quality of life for Tennessee citizens.

9. A review of service area delineations and policies of Tennessee higher education institutions in relation to community needs, labor market patterns and geographic convenience may be in order to address issues of access, territoriality and turf.
10. A review of effective models and strategies for building strong, effective working relationships between community college staff and faculty, other training and education providers and economic development professionals should be conducted and disseminated so that all involved groups can be better positioned to work together more effectively.

Economic development has been and will continue to be a complex, education-intensive process. Although community and technical colleges have filled critical roles in this process for several decades, in recent years personnel from both institutional types have been asked to expand their economic development activities by considering new purposes and forming new partnerships with both public and private groups interested in the economic well-being of their local communities (Selman and Wilmoth, 1995). Research findings of this dissertation also confirm this observation applicable to Tennessee at this time.

Tennessee community colleges have evolved in missions and services related to economic development since their inception. Through the research process it was determined that campus level leaders reported that they think they are doing well with the resources available, however, community level economic developers would like us to do more. From a policy perspective, it was easy to see that state and local level systems, policies and procedures haven't quite caught up with the demand for community college involvement in economic development.

Specific steps to be taken to address this situation include examination and realignment of state and local missions to support and embrace economic

development. This process will require in depth education of community college personnel, along with many other stakeholder groups involved in economic development. Community college leaders must open themselves for input and willingly collaborate with the economic development community to develop economic development/workforce development strategies and plans. State and local leaders must align policy, resources and evaluation measures to support this important effort. Our higher education system, like business, must invest or reallocate resources toward economic development programming, if we are serious about addressing this area of work. This investment will allow community colleges to better fulfill the important economic development role.

As this statement is offered in light of our current funding situation in higher education in Tennessee, it is known that our higher education institutions cannot continue to be solely dependent on state dollars. The author firmly believes however, that investment in campus based economic development programming will yield more revenue sources for our institutions, as new partnerships efforts and contracted services result. This investment will also support our community colleges and other higher education institutions to become leaders and fully participate in developing a prepared work force in support of the continued economic and community development of Tennessee.

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## **Electronic Commerce Education: Implications for Tennessee Higher Education**

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The emerging digital economy has significantly changed the way organizations and individuals interact and exchange products and services. The Internet-based technology has also changed traditional channels of business communications (e.g., face-to-face, phone/fax, and mail) to more efficient and effective electronic commerce (hereafter e-commerce). The explosion in Internet growth during the past several years coupled with the growing numbers of e-commerce transactions underscores the importance of e-commerce in today's business environment. E-commerce has been one of the biggest news stories of the past and current decade. Business schools have been active participants in this drive toward education and implementation of e-commerce. Business schools nationwide are redesigning their curriculum to provide knowledge-acquisition in e-commerce for the emerging digital economy leaders.

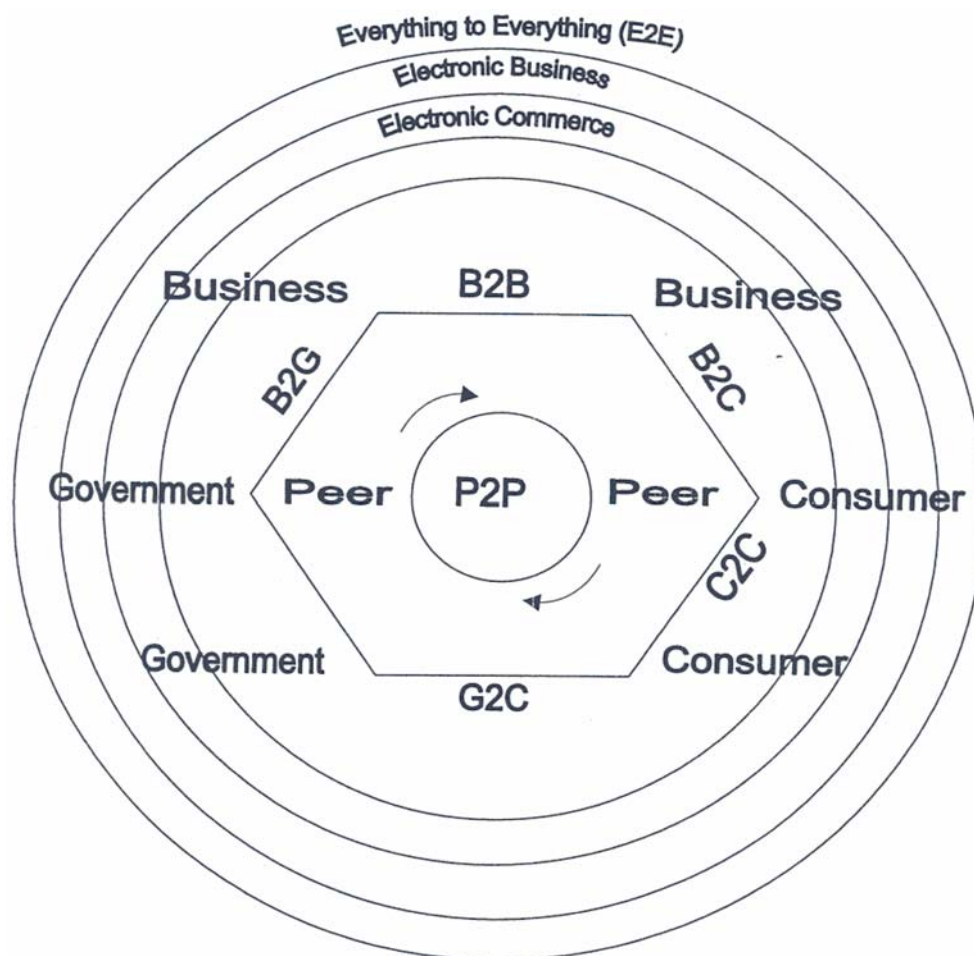
E-commerce education has evolved over the past two decades and continues to develop to accommodate the ever-changing global and technologically advanced business environment. The primary purposes of this article are to (1) describe e-commerce; and (2) discuss the business curriculum implications of e-commerce and their relevance for Tennessee Higher Education and Public Policy. Businesses have adopted and implemented e-commerce into their normal activities to remain competitive in the global market. Many business schools throughout the nation have started to offer courses, concentrations, or degree programs in e-commerce. It will not be long before all business schools will have to offer some coverage of e-commerce education in their business curriculum to stay competitive.

### **Impacts of E-Commerce on Business**

E-commerce has already revolutionized the way business is conducted and the way organizations advertise, market, and sell their products and services. E-commerce is broadly defined as the conducting of business communications and transactions over computer-mediated networks. Figure 1 describes the types of e-commerce and their related strategies. Business to Business (B2B) refers to online exchange of products and services involving transactions between businesses and suppliers (e.g., CISCO).

Business to Consumer (B2C) is an online strategy of business dealing directly with consumers (e.g., Amazon.com). Consumer to Consumer (C2C) which is an online strategy of consumers dealing directly with consumers (e.g., E-Bay). Business to Government (B2G) deals with electronic transactions between businesses and governmental agencies local, state, and federal. Government to Government (G2G) e-commerce strategy includes all online programs and activities between government agencies (e.g., electronic transfer of funds and direct deposit). Government to Consumer (G2C) refers to online transactions between governmental agencies and consumers (e.g., electronic transfers of state subsidy checks). Peer to Peer (P2P) relates to sharing of computer capabilities between application platforms.

**FIGURE 1: ELECTRONIC COMMERCE STRATEGIES**



In the past two years, the number of B2Bs in the marketplace expanded from 400 to more than 1,000, and the amount of B2B transactions is estimated at over \$2.1

trillion for the year 2000<sup>1</sup>. EDI is a segment of B2B that has transformed the business environment primarily because many companies (e.g., Wal-mart) require that their suppliers must develop EDI capabilities for online orders, shipments, and inventories. B2C, the online services provided by businesses to their customers, is also growing significantly. These services range from Internet service providers (ISP) to direct selling of products via company websites. E-cash and e-banks are two examples of B2C which are drastically changing the way banks operate and provide products and services to their customers. C2C is typically promoted through online auction forums such as eBay.com. These online forums bring potential buyers and sellers together where the negotiated price (among users) determines the selling price.

E-commerce has provided businesses with many opportunities to save cost and continuously improve their performance. Customers can log on to a company's website to shop for their products and services. Companies are able to accept orders online and payment electronically. Thus, e-commerce facilitates expediting orders, invoices, acknowledgements, and payments. The emerging e-commerce is so significant that the White House has appointed an e-commerce senior advisor to focus on the developments, opportunities, challenges, and significance of e-commerce in our society today<sup>2</sup>. Businesses of all sizes and in all industries can benefit significantly from the proper use of e-commerce. Small businesses can benefit from the implementation of e-commerce to compete with larger companies for the same market or to reach out to the global marketplace. Large businesses need e-commerce to maintain their market share in the global marketplace, promote continuous growth and reach new markets.

In summary, e-commerce can provide businesses with unprecedented opportunities of broader market reach, increased efficiency and effectiveness, improved customer services, significant cost savings, instant communication with trading partners and consumers, improved profit margins through supply chain management, and better forecasting of customer demands for products and services<sup>3</sup>. There are fundamentally ten reasons why a company should be using e-commerce to improve its competitive position in the global electronic marketplace “(1) getting started is easy; (2) faster and cheaper delivery of information; (3) quick feedback on new products; (4) improved customer service; (5) global audience; (6) leveling the field of competition; (7) a strategic tool; (8) it's cheaper than a phone call; (9) enhanced business-to-business links; and (10) because your competitors are.” E-commerce has and will continue to improve the way

organizations advertise, market, and sell their products and services. Thus, corporate America demands business schools provide e-commerce education through offering courses, concentrations, or degree programs in Internet-based technologies and e-commerce strategies.

### **E-Commerce Education**

Demand for individuals possessing Internet technology and e-commerce education and experience is increasing as more and more companies use e-commerce for their business exchanges. A recent survey of a large sample of both academicians and practitioners shows that both groups believe there is an increasing demand and interest in e-commerce education throughout the nation.<sup>5</sup> This study also reveals the following perceived benefits of e-commerce education: (1) it will prepare students to be able to continue professionally in the Internet-based technology era; (2) it will make students more desirable in the marketplace; (3) almost all organizations for profits, governmental, and not-for-profit use e-commerce for their business activities; and (4) coverage of e-commerce in the business curriculum is required to stay academically competitive.<sup>6</sup> Internet technology has significantly changed business education and the study habits of students. Many universities have installed Internet connections in dorm rooms to facilitate online resource activities of students. Some universities are placing their catalog online and accepting online applications for enrollment. Several business schools (e.g., the University of Virginia's Darden School of Business, the University of Michigan's School of Business, and the Haas School of Business at the University of California at Berkeley) have taken proactive steps in developing virtual the classroom environment.<sup>7</sup> Joint classes on e-business are hosted by one school, while the other schools participate in real-time discussions. Other universities such as the Wharton School of the University of Pennsylvania, Carnegie Mellon, MIT, Vanderbilt, the University of Maryland, Creighton, Bentley, Temple, and the University of Wyoming, have offered e-commerce majors and/or degree programs.

In June 1999, six schools worldwide took a holistic approach to e-business. Three schools in the United States (the Darden School at the University of Virginia, the Anderson School at UCLA, and Carnegie Mellon in Pittsburgh), two schools in Europe (London Business School and Insead), and one school in Australia (the University of Melbourne), decided to pool their resources to perform an e-commerce simulation of

building a Lego car without face-to-face contact.<sup>8</sup> This project was the first of its kind to promote cooperation among schools worldwide, in sharing their research and course information. This project underscores the importance of the Internet in bringing businesses, customers, and suppliers closer together. However, the realization of nonpersonal contact was obvious once the project was started, which demonstrates the difficulties of doing business over the Internet.

The emerging virtual university is becoming more popular as universities start offering "interactive-like" instruction over the Internet and breaking through geographic limitations. For example, the University of Phoenix offers both undergraduate and graduate virtual programs allowing students to log on to the class from a home computer and obtain educational degrees in less time than attending a traditional university. An important step toward materializing the virtual university is the Carden University sponsored by Unext.com. This Internet educational institution consists of five prestigious schools: Carnegie Mellon, Chicago, Columbia, London School of Economics, and Stanford.<sup>9</sup> The virtual university has primarily two target markets: individuals worldwide who cannot attend a top university and professionals who already have degrees (e.g., executives, teachers) but need additional educational opportunities and continuous lifelong education to maintain their current status or advance their careers.

The Internet-based Cardean University has launched its program since the summer of 2000 and was expected to offer 100 courses by the end of the year 2000. A course will require 30 hours of work. Four or more courses make up a "course suite," equivalent to a typical university semester. Two companies enrolling pilot groups in the educational program are Bank of America and Owens-Illinois in the packaging industry. Unex.com is planning to offer MBA and other graduate degrees. Challenges that have been addressed in this virtual university include the loss of "face time" with professors, student study groups, and beer-hall sessions outside the classroom. Options being considered are to mount cameras on each student's computer and use broadband video to gather everyone together on the computer screen. Opportunities provided by this virtual university are many, including getting an educational degree by taking online courses; learning at the most convenient time; gaining continuous knowledge at a faster rate; and obtaining an educational degree at a lower cost and in a shorter time period from more prestigious universities.

Many universities have used Internet-based technology to offer revenue-generating online distance educational courses. However, the Massachusetts Institute of Technology (MIT) is the first institution planning to provide free knowledge-acquisition by making the educational materials for almost all its courses freely available via the Internet for the next ten (10) years.<sup>10</sup> The Website *MIT OpenCourseWare* would freely provide lecture notes, course outlines, reading lists, and assignments for more than 2,000 courses in engineering, arts, humanities, science, and social sciences. The project will be fully developed over the next decade with the expectation that educational materials for more than 500 courses will become freely available online within the next two years.

This free online dissemination of educational materials and innovation in teaching will benefit institutions of higher education worldwide, especially those in developing countries. Although MIT is the pioneer of this state-of-the-art, innovative, -free online educational project, the other top tier universities are expected to follow the lead. The ever increasing growth of e-commerce encourages many universities to offer courses, concentration, and degree programs in e-commerce. Table 1 summarizes the curriculum coverage, objectives, requirements, and content of e-commerce courses in a sample of selected universities. E-commerce courses range from "Managing the Electronic Business" to E-Commerce Behavior." For example, the University of California at Davis began to offer e-commerce as an area of concentration in its MBA program in the fall of 1999. The Massachusetts Institute of Technology in Cambridge started an "Electronic Commerce and Marketing" track in the fall of 1999 in its MBA program. Carnegie Mellon University in Pittsburgh began offering a masters' program in electronic commerce in 1999, which is designed to educate a new generation of managers and consultants in this rapidly-increasing field.

Table I shows that universities offering degree programs in e-commerce stated the following objectives for their programs to: (1) train and educate students to become e-commerce managers, consultants, and entrepreneurs; (2) educate students regarding how Internet technology may be leveraged to improve organizational performance; (3) explore the transformational effects that information technology and the Internet are having on business; (4) prepare students to become certified and function as e-commerce managers; (5) provide knowledge in e-commerce and in e-business to both graduate and undergraduate students; and (6) educate a new generation of managers, planners, analysts, and programmers in the realities and potential for electronic commerce. The

degree requirements depend on the degree program, ranging from 36 credit hours to a simple course in e-commerce.

### **Delivery of Electronic Commerce Education**

The unprecedented growth in the use of Internet-based technologies and e-commerce has provided incentives for colleges and universities throughout the nation in general and in Tennessee in particular to incorporate e-commerce education into their curriculum. There are three fundamental approaches to coverage of e-commerce education. The first approach is to treat e-commerce as a single discipline by providing a separate degree program, concentration, or certification. The advocates of this approach in Tennessee are Vanderbilt University and the University of Memphis, among others. Vanderbilt University's Owen Graduate School of Management, in 1995, launched the nation's first e-commerce concentration with one student. However, its e-commerce program has substantially grown to include a dozen professors, 19 courses in e-commerce, and a center devoted to e-research. Master of Science in E-commerce in the Fogelman College of Business and Economics at the University of Memphis has recently been established and has been successful in attracting students to its e-commerce program. The e-commerce degree programs that are currently being offered nationwide are (1) bachelor's degree majors; (2) master's degree concentrations; (3) master's degree programs; and certificate programs. Table 2 presents categories of colleges and universities that are currently offering a variety of degree programs in e-commerce education.

The second approach is to offer stand-alone e-commerce course(s) at undergraduate, graduate, or both undergraduate and graduate levels. The majority of business schools throughout the nation, including Middle Tennessee State University, are currently offering a separate e-commerce course. E-commerce courses commonly range from the generic title of "E-commerce" to more specific course titles such as "Web Business Strategy" and "Information Superhighway." An e-commerce course at either graduate and/or undergraduate level should be designed with the primary focus on e-commerce systems, strategies, and technologies to prepare students to assume project management or technical support roles in the emerging digital workplace. Although the course content can vary among institutions of higher education, some common e-commerce topics are: Internet programming; e-commerce strategies; operating systems; e-commerce law, policy and

regulations, e-commerce technology system design; human/computer interaction; and electronic financial reporting.

The third approach is to infuse e-commerce education throughout the business curriculum as part of the core business curriculum requirements. This approach requires integration of e-commerce topics into existing upper-level business courses in different disciplines (e.g. accounting, economics, finance, marketing, management, information systems). There is no strong preference toward any one of these three approaches to covering e-commerce in the business curriculum. Each has its own merit, serves a different purpose, provides unique opportunities and challenges, and requires distinct human and capital resources. E-commerce education can provide valuable knowledge in Internet-based technology, e-commerce strategies, and electronic business reporting to business students regardless of being offered as a stand-alone degree program, infused into the core business curriculum, or offered as a distinct course.

### **Current Trends in E-Commerce Education**

Many of the e-commerce degree programs are designed very quickly and, while they are currently popular with students, may not succeed as initially expected. Critics of these programs argue that e-commerce programs (1) have cobbled together in record time; (2) are evolving by the minute; (3) are widely popular with students; and (4) will probably disappear in five years.<sup>11</sup> The enrollment in e-commerce degree programs at many business schools throughout the nation is substantially down this year compared to last year. For example, the enrollment in the Internet marketing class at MIT's School of Management is down 29 percent from last year. One reason for lack of success in e-commerce education is attributed to recent failures of many dot.coms. A recent article in *Fortune* (April 16, 2001) states that "...the bursting of the dot-com bubble means that the nation's top business schools, which just two years ago rushed to pepper their curriculums with e-commerce case studies, courses, and even majors, are now downplaying these changes-and planning to absorb e-education into the general curriculum."<sup>12</sup>

The dot.com debacle should not encourage business schools around the nation in general and those in Tennessee in particular to de-emphasize the importance of e-commerce education. However, it should redirect business schools' attention from offering specialized e-commerce programs to integrating Internet-based technologies,

including e-commerce, into their core curriculum. Indeed, a most recent survey of a large sample of academicians and practitioners concludes that the preference method of both groups in delivery of e-commerce education is to either offer e-commerce courses (at either graduate, undergraduate, or both graduate and undergraduate levels) or to integrate e-commerce education into the core business curriculum.<sup>13</sup> Furthermore, many top-tier universities, including Stanford, Harvard, Chicago, and the University of Virginia have decided to integrate e-commerce education throughout the business curriculum to provide a foundation of general managerial skills and Internet-based technologies that students can apply to all kinds of companies, including dot.coms in the emerging digital economy.

### **Implications of E-Commerce Education for Tennessee Higher Education and Public Policy**

There are several implications of e-commerce education for Tennessee higher education and public policy. First, business schools nationwide are redesigning their curriculum to provide knowledge-acquisition in e-commerce for the emerging digital economy leaders. Fortunately, almost all institutions of higher education in Tennessee have recognized the importance of e-commerce education and taken necessary initiatives to ensure coverage of e-commerce education in their curriculum.

Indeed, the Owen School of Management at Vanderbilt University, in 1995, was the first to launch an e-commerce concentration in a university business curriculum. Vanderbilt University started its e-commerce education program with one student in 1995. Today, its e-commerce education program includes more than a dozen instructors and 19 courses, with almost half of the school pursuing e-commerce and a center devoted to e-research. Tennessee has taken the lead in this important initiative toward coverage of e-commerce education in its higher education and public policy.

Second, corporate America demands that business schools provide e-commerce education. Fundamental changes in standard business practices caused by the emerging digital economy, Internet-based technologies, and the exponential growth in the use of e-commerce create an increased demand for net-savvy managers and employees who understand e-business and technology. An e-commerce course provides understanding of information technology; Internet-based technological advances; e-commerce concepts, strategies, and practices; and electronic financial reporting.

Third, business schools have always sought the financial support of the business community in establishing innovative educational programs. The business community and professional organizations have traditionally provided strong support to business schools in developing the needed educational programs, especially in e-commerce. For example, the Fogelman College of Business and Economics at the University of Memphis in establishing its interdisciplinary Master of Science degree in Electronic Commerce has received substantial support from the local business community, especially through the new FedEx Emerging Technology Complex.

Finally, e-commerce has been one of the biggest news stories of the past several years. E-commerce will continue to have an impact on businesses in the way products and services marketed and performed, financing is obtained, investments are made, and stakeholders (e.g., shareholders, creditors, suppliers, employees) are informed about business decisions and their related electronic business reports. In the new millennium, those businesses that fail to use new technology and switch from bricks and mortar to bricks and clicks are doomed to fail. Accordingly, business schools that do not promptly and effectively respond to the business community educational needs and demands are doomed to vanish.

## **Conclusion**

The Internet and the Web have had a significant effect on how business and customers transact sales of products and services. The rapid growth of e-commerce is affecting the way businesses operate and interact with each other and their customers and suppliers. Business schools have been active participants in this drive toward education and implementation of e-commerce. E-commerce education has evolved from covering one or more chapters in business 13 courses to offering a separate course and now to developing e-commerce degree programs and/or majors at both undergraduate and graduate levels. There are many reasons for business schools throughout the nation, and especially those in Tennessee, to focus on e-commerce. First, e-commerce is growing quickly, and many businesses use e-commerce. Second, job openings are numerous and employers demand more education, expertise, and knowledge in e-commerce. Third, business schools can enhance their enrollments by offering concentrations and/or degree programs in e-commerce. Fourth, all business schools will have to offer some coverage of e-commerce in their business curriculum to stay competitive by offering new

areas of specialization and enhancing their international business offerings. Finally, given that thee-commerce occupational field is expected to be among the fastest growing in our emerging digital marketplace, universities should integrate e-commerce education into their curriculum.

### Endnotes

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- <sup>4</sup> Campbell, A. J. 1998. "Ten Reasons Why Your Business Should Use Electronic Commerce." *Business America* (Vol. 19, n. 5 May): 12-16.
- <sup>5</sup> Rezaee, Z., R. Elam, and J. Cassidy. 2001. "Electronic Commerce Education: Insights From Academicians and Practitioners." Working Paper, Middle Tennessee State University.
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- <sup>7</sup> Beard, A. 2000. "Tutors Broaden Their Vision: Virtual Classrooms: U.S. Business Schools Are Using Interactive Technology as a Low-Cost Way to Share Sxpertise." *The Fiscal Times* (July): 17.
- <sup>8</sup> Bradshaw, D. 2000. "Schools Unite to Deliver Net Lesson: Business Education Global Alliance." *The Financial Times* (February): 16.
- <sup>9</sup> McCormick, J. 2000. "The New School." *Newsweek* (April 24).
- <sup>10</sup> Available at <http://www.wirednews.com/news/culture..html>.
- <sup>11</sup> Melymuka, K. 2000. "Mastering E-commerce by Degrees." *Computerworld* (November 20):48.
- <sup>12</sup> Harrington, A. 200 I. "E-Curriculum: Easy Come, Easy Go." *Fortune* (April 16, 200 I): 410.
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**Table 1**

<b>E-COMMERCE EDUCATION</b>			
<b>University</b>	<b>Degree</b>	<b>Purposes</b>	<b>Requirements</b>
Bentley College	<b>MBA</b> Concentration (interdisciplinary) E-Business (EB)	To provide knowledge in e-commerce and e-business to: (1) undergraduate majors in accounting, computer information systems (CIS), or finance wishing to pursue an e-business career path; and/or (2) students with an established career track in accounting, CIS, marketing, or finance wanting to understand the impact of e-commerce and e-business on their organizations	This concentration in EB consists of a total of 12 credits including electronic commerce with a global economy course and nine credits chosen from other graduate accounting, CIS, marketing, and finance courses no more than six credits in any discipline.
Carnegie Mellon University	Master of Science in Electronic Commerce (MSEC)	To educate a new generation of managers, planners, analysts, and programmers in the realities of and potential for electronic commerce	This MSEC degree program consists of (1) four minisemesters (each seven weeks long) of coursework distributed evenly between computer and business courses; (2) a practicum over two consecutive minisemesters in which teams of students build a prototype e-commerce system to solve a real-world problem.
Illinois Institute of Technology	M.S. in E-Commerce	<ol style="list-style-type: none"> <li>1. To provide a comprehensive preparation in the business and managerial, technical, and legal aspects of conducting electronic business</li> <li>2. To teach the application of Internet technology both to enhance existing business processes and create new business opportunities with customers, suppliers, and partners</li> </ol>	This 14-course curriculum consists of business strategy in the network economy; strategic marketing for e-commerce; supply chain management; Web page design and navigation; e-commerce law and regulations; and e-commerce emerging issues and technology

**Table 1 (continued)**

<b>E-COMMERCE EDUCATION</b>			
<b>University</b>	<b>Degree</b>	<b>Purposes</b>	<b>Requirements</b>
Massachusetts Institute of Technology	Economics and E-Commerce (advanced undergraduate student course)	Uses theoretical models and studies of "old economy" industries to help understand the growth and future of electronic commerce	1. Knowledge of mathematical modeling, microeconomics, econometric analysis, and basic game theory 2. Course requirements: ten problem sets, a midterm exam, and a three-hour final exam.
University of California at Berkeley/Haas School of Business	E-Business: The Transformational Potential for Business (1.5-unit Web course)	1. Offered by faculty from Darden School at the University of Virginia by video conferencing and the Web to students at Berkeley and the University of Michigan simultaneously 2. Explores the transformational effects that information technology and the Internet are having on business 3. Provides a fundamental understanding of the E-Business landscape, including economic concepts, business models, and strategies for both Internet "pure plays" and traditional business	1. Allows for two-way interactions between Berkeley students, Michigan students, and Darden students and instructors 2. Course requirements: class participation (40 percent), exercise and book review (20 percent), and exam (40 percent).
University of California at Berkeley/Haas School of Business	Telecom and E-Business	Provides, in a three-unit course, a foundation in areas of e-business, B2B, B2C, and IntraBusiness commerce	Conducted as a combination of cases, lectures, readings, guest speakers, and hands-on experience through real-world projects.

**Table 1 (continued)**

<b>E-COMMERCE EDUCATION</b>			
<b>University</b>	<b>Degree</b>	<b>Purposes</b>	<b>Requirements</b>
University of Maryland	The Electronic Commerce MBA Concentration	<ol style="list-style-type: none"> <li>1. To explore the emerging new business models in electronic commerce (EC) with a broad understanding of the key trends in the technology supporting EC applications</li> <li>2. To offer a cross-functional concentration consisting of EC courses offered by faculty specializing in Decision and Information Technologies, Marketing, Economics, and Supply Chain Management</li> </ol>	<p>Consists of:</p> <ol style="list-style-type: none"> <li>1. One course in Electronic Commerce; Business Models and Technology; or Electronic Commerce: Markets and Netcentric Systems; and</li> <li>2. Any three courses from the following:               <ol style="list-style-type: none"> <li>a. Electronic Channels</li> <li>b. Telecommunications and Technology Policy</li> <li>c. Data Mining</li> <li>d. Real-Time Management of Supply Chains</li> <li>e. Telecommunications and Computer Networks</li> <li>f. Web Commerce Security</li> </ol> </li> </ol>
University of Wyoming	M.S. in <b>E-Business</b>	<ol style="list-style-type: none"> <li>1. To educate students regarding how Internet technology may be leveraged to improve organizational performance</li> <li>2. To obtain master's degree in one year and become successful e-business managers, consultants, and entrepreneurs.</li> </ol>	<ol style="list-style-type: none"> <li>1. Consists of 36 credit hours:               <ol style="list-style-type: none"> <li>a. 20 classroom courses, 1.5 credit hours each</li> <li>b. 6 credit hour practicum as a capstone experience</li> <li>c. team-based curriculum</li> </ol> </li> <li>2. Provides equal portions of business and computer science coursework</li> <li>3. Accepts students with a variety of undergraduate degrees</li> </ol>

**Table 1 (continued)**

<b>E-COMMERCE EDUCATION</b>			
<b>University</b>	<b>Degree</b>	<b>Purposes</b>	<b>Requirements</b>
Vanderbilt University	E-Commerce Program Track: E-Commerce Manager Certification Program	To prepare students to become certified and function as an E-Commerce Manager. Students may earn the following certificates: Comp TIA 's + Net+ Certification; ProSoft Training.com's Foundations Internet Webmaster Certification; ProSoft Training.com's Site Designer Internet Webmaster Certification; ProSoft Training.com's Application Developer Internet Webmaster Certification; ProSoft Training.com's E-Commerce Designer Internet Webmaster Certification; ProSoft Training.com's Master Internet Webmaster Designer Certification.	26-week E-Commerce Manager program consisting of: 1. Internet Fundamental (6 weeks) a. basic internet business fundamentals b. advanced internet business fundamentals c. html fundamentals d. networking fundamentals e. site design and management with frontpage 2. Website Design (5 weeks) a. design methodology and technology 3. Web Application Development (10 weeks) a. JavaScript fundamentals (xml) b. visual java using visualage for java (visual Interdev) c. fundamentals of cgi programming using perl d. server side scripting and security 4. E-Commerce professionals (5 weeks) a. E-Commerce concepts and practices b. E-Commerce strategies and solutions

**TABLE 2**  
**DEGREE PROGRAMS IN E-COMMERCE BY UNIVERSITIES \***

<b>Bachelors Degree Majors</b>	<b>Master's Degree Concentration</b>	<b>Master's Degree</b>	<b>Certificate Programs</b>	<b>Student Organizations in E-commerce</b>
University of New Brunswick in Saint John	Allentown College of Saint Francis de Sales	Bentley College	Bentley College	University of California, Berkeley
University of Scranton	American University	Carnegie Mellon University	University of British Columbia	Carnegie Mellon University
University of South Alabama	Arizona State University	Claremont Graduate University -School of Information Science	University of California, Berkeley	Georgia Institute of Technology
Texas Christian University	Bentley College	University of Colorado at Denver	University of Dallas	University of Michigan Business School
University of Toledo	Boston College	Creighton University	University of Florida	Northwestern University
Utah State University	Carnegie Mellon University	Dalhousie University	Georgia Institute of Technology	University of Pennsylvania
University of West Florida	Case Western Reserve University	ESC Lille -Lille Graduate School of Management	Grand Valley State University	University of Rochester
	College of Notre Dame	Illinois Institute of Technology	Loyola University Chicago	Stanford University
	University of Dallas	University of Memphis	University of Missouri -St. Louis	The University of Texas, Austin
	University of Denver	University of San Diego	University of New Brunswick	Vanderbilt University
	DePaul University	Temple University	Rutgers University	
	Emory University	West Chester University	San Jose State University	
	The George Washington University	University of Wisconsin, Milwaukee	Southern Methodist University	
	Georgia State University	University of Wyoming	University of Washington	
	Johns Hopkins University		Worcester Polytechnic Institute	
	Loyola University Chicago			
	University of Maryland			

**TABLE 2**  
**DEGREE PROGRAMS IN E-COMMERCE BY UNIVERSITIES \***

<b>Bachelors Degree Majors</b>	<b>Master's Degree Concentration</b>	<b>Master's Degree</b>	<b>Certificate Programs</b>	<b>Student Organizations in E-commerce</b>
	Massachusetts Institute of Technology			
	McMaster University			
	Michigan State University			
	University of New Brunswick			
	New Jersey Institute of Technology			
	North Carolina State University			
	Northwestern University			
	University of Rochester			
	Rutgers -The State University of New Jersey			
	University of Pennsylvania			
	Purdue University, Krannert Graduate School of Management			
	University of San Diego			
	Southern Illinois University at Edwardsville			
	Temple University			
	The University of Texas, Austin			
	Texas A&M University			
	Texas Christian University			
	University College Dublin			
	Vanderbilt University			
	Wake Forest University			
	University of Wisconsin- Milwaukee			
	Worcester Polytechnic Institute			

\*Source: AACSB Products & Services, Available <http://www.aacsb.edu>.